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FINAL SUPPLEMENTAL LEGISLATIVE ENVIRONMENTAL IMPACT STATEMENT

Proposed Changes to the Coastal Barrier Resources System

U.S. Department of the Interior

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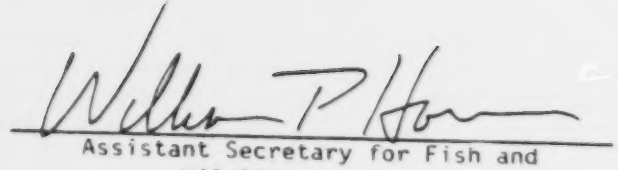
FINAL SUPPLEMENTAL LEGISLATIVE ENVIRONMENTAL IMPACT STATEMENT ON THE PROPOSED CHANGES TO THE COASTAL BARRIER RESOURCES SYSTEM

United States Department of the Interior

1988



Assistant Secretary for Fish and
Wildlife and Parks

SUMMARY

Coastal barriers occur along many of the world's oceanic shorelines. One of the longest and most continuous chains of these barriers borders the Atlantic Ocean and Gulf of Mexico from Maine to Texas. These barriers protect many diverse aquatic habitats and are the first line of defense for the mainland against severe coastal storms.

Located at the interface of land and sea, coastal barriers are continuously shaped by winds, waves, and tides, making them generally hazardous sites for permanent human development. During the past three decades, however, residential development has proceeded swiftly on coastal barriers, and the pressures for more residences at the seas' edges still affect much of the Atlantic and gulf coasts. Even popular magazines raise the question, "What is happening to our coastlines?" (Time, 8/10/87).

Concern for the natural resources of coastal barriers, the safety of the people who work and play on these barriers, and the costs to the Federal Government of coastal flooding and other damages led to the passage of the Coastal Barrier Resources Act (CBRA) in 1982. Studies initiated in 1977 by the Department of the Interior helped form the background for this legislation.

The CBRA was enacted with the specific purpose of restricting federally subsidized development of undeveloped coastal barriers along the Atlantic Ocean and Gulf of Mexico coasts in order to (1) minimize the loss of human life, (2) reduce damage to fish and wildlife habitat and other valuable natural resources of coastal barriers, and (3) reduce the wasteful expenditure of Federal revenues. The intent of the CBRA was to remove the Federal incentives for new development from the undeveloped coastal barriers included in the Coastal Barrier Resources System (CBRS). The CBRA carries out its intent by prohibiting most expenditures of Federal funds that directly or indirectly promote development (e.g., Federal flood insurance, U.S. Army Corps of Engineers structural development projects, and Federal assistance for construction of roads, bridges, water supply systems, and the like) within the CBRS. The effect of the CBRA is to place the financial risk associated with development on those who choose to live on, or who invest in the coastal barriers.

This supplemental legislative environmental impact statement (LEIS) assesses the environmental consequences of alternatives considered since the Final Environmental Statement on Undeveloped Coastal Barriers (1983 FES) was published by the Department of the Interior (DOI) in May 1983. In the LEIS, two alternatives are considered in detail, the Proposed Action and the No Action. Other alternatives considered between 1983 and 1987 are described briefly.

The Proposed Action, if enacted by Congress, would add about 790,884 acres (fastland and wetland) and some 423 miles of shoreline to the CBRS through expansion of various components within the definition and delineation criteria for coastal barriers, namely, those concerning the composition of coastal barriers, associated aquatic habitat, and secondary barriers. It also would adjust boundaries of some existing CBRS units to exclude development that existed in 1982, and areas that were misclassified as coastal barriers in 1982.

To the extent that the Proposed Action limits new development, it will contribute to preserving coastal barrier areas in their natural condition and to maintaining the valuable fish and wildlife resources they support. The Proposed Action will result in significant savings to the Federal treasury; however, it may also result in economic costs to individual owners and developers of coastal barrier property, especially in the Florida Keys, Puerto Rico, and the U.S. Virgin Islands where development pressures are great.

Under the No Action alternative, no new areas would be added to the CBRS, and development with the full range of Federal subsidies could continue in the proposed-addition areas. This development could impair the biological and geological functioning of many coastal barriers resulting in declines in the fish and wildlife resources they support. The No Action alternative will result in significant recurring Federal costs and may increase risks to the public safety.

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CHAPTER I

PURPOSE, NEED, AND BACKGROUND OF THE PROPOSED ACTION

A. Purpose and Need

The National Environmental Policy Act requires a legislative environmental impact statement when Federal agency proposals are required by statute and when proposals seek legislative approval for specific geographic locations. This Supplemental Legislative Environmental Impact Statement (LEIS) was prepared to update the 1983 Final Environmental Statement on Undeveloped Coastal Barriers (1983 FES). It assesses the specific environmental implications of the Department of the Interior's recommendations to Congress for changes in the Coastal Barrier Resources System (CBRS), which was established under the Coastal Barrier Resources Act (CBRA) in 1982. These recommendations were developed in accordance with Section 10 of the CBRA which directs the Secretary of the Interior to prepare a report to Congress on the CBRS which contains:

1. recommendations for the conservation of fish, wildlife, and other natural resources of the System based on an evaluation and comparison of all management alternatives;

2. recommendations for additions to, or deletions from, the Coastal Barrier Resources System, and for modifications to the boundaries of System units;

3. a summary of the comments received regarding the CBRS; and

4. an analysis of the effect of general revenue sharing grants on the CBRS.

The Department of the Interior's recommendations to Congress will serve to minimize the loss of human life, wasteful expenditure of Federal revenues, and damage to the natural resources of the undeveloped coastal barriers recommended for addition to the CBRS.

B. Background

The CBRA was the culmination of several years of study by Congress and the Department of the Interior (DOI) of Federal programs and coastal barriers. In 1977, the DOI initiated intensive studies of the Nation's coastal barriers. These early studies focused on the identification and assessment of alternative approaches for protecting coastal barriers and reducing the recurring Federal costs associated with their development. In January 1980, in cooperation with the Department of Commerce and the Council on

Environmental Quality, the Department of the Interior released a Draft Environmental Statement describing the results of these analyses. While containing no proposed action, this document identified the need to develop a consistent Federal policy related to coastal barriers and presented a broad range of program-specific options with three alternative levels of action. These were intended for a review that would lead to selection of a proposed action to be contained in a final environmental impact statement.

In 1981, the Omnibus Budget Reconciliation Act (OBRA) was passed. Section 341 of the OBRA amended the National Flood Insurance Act of 1968, to prohibit the issuance of any Federal flood insurance coverage after October 1, 1983, for any new construction or substantial improvements of structures located on undeveloped coastal barriers. The OBRA established a precedent for withdrawal of Federal financial assistance for development as one means of protecting coastal barriers and reducing recurring Federal costs associated with their development and reconstruction. Thereafter, the emphasis of the DOI studies shifted from assessing broad policy options to developing detailed criteria for implementing the OBRA provisions.

In accordance with the OBRA, on August 13, 1982, the Secretary submitted to Congress a report that made recommendations relating to the term "coastal barrier" and listed 188 coastal barriers recommended for designation as undeveloped coastal barriers under the OBRA. Three days later, the delineation criteria and the list of barriers were published in the Federal Register (47(158): 35696-35715).

The final EIS was not yet completed when the Coastal Barrier Resources Act was signed into law on October 18, 1982. Although the enactment preempted the final rulemaking on definition and delineation criteria and final designations of undeveloped coastal barriers by statutorily establishing the Coastal Barrier Resources System, the definitions used in the CBRA are consistent with the definitions used in the OBRA, and the delineations of the undeveloped coastal barriers in the CBRS are generally consistent with those proposed by the Secretary of the Interior in his 1982 report.

The CBRA retained the OBRA prohibition against Federal flood insurance for new construction or substantial improvements on structures on undeveloped coastal barriers on or after October 1, 1983. However, the CBRA went beyond the OBRA by expanding the scope of the prohibition of Federal expenditures and financial assistance to include all Federal programs that support development on the undeveloped coastal barriers within the CBRS. The CBRA, however, did exempt certain types of expenditures and assistance from the prohibition, namely, those for conservation, public recreation, scientific research, air and water navigation, national security, energy development, maintenance of existing public facilities and structures, general revenue sharing grants to the States, and public emergencies. The restrictions on Federal financial assistance--except for Federal flood insurance--became effective October 18, 1982.

The Final Environmental Statement was issued in May 1983. It assessed the likely environmental consequences considered in the planning process between January 1980 and October 1982. The Broad and High Level Protection

alternatives of the 1983 FES were written pursuant to enactment of the CBRA and in cognizance of the Section 10 requirement to prepare a report to Congress.

Following the issuance of the 1983 FES, the DOI published, in the Federal Register of December 5, 1983 (48(234): 54545), an outline of the studies it was undertaking to prepare the CBRA Section 10 report to Congress. Public comments on the study plan, requested in the same notice, were accepted through February 1, 1984.

As part of the information-gathering process, a draft national inventory of undeveloped coastal barriers on all United States coastlines, and a draft report on potential conservation alternatives for the CBRS were issued by the DOI in the spring of 1985. Although it did not include recommendations, the draft report provided a range of alternatives that could be used later as the basis for recommendations to Congress. Both documents were made available for review by State and local governments, Federal agencies, the Congress, and the public. By the close of the comment period on September 30, 1985, over 2,300 comments had been received expressing a wide variety of viewpoints and opinions.

During the comment period, Departmental representatives also met with State and local officials, and attended 26 public meetings and workshops in 10 States. After reviewing the public comments and the information gathered, the Assistant Secretary for Fish and Wildlife and Parks formulated proposed recommendations to Congress.

In March 1987, the DOI issued a second draft report containing these proposed recommendations. Public comments on this draft report were solicited and accepted for a 90-day period, closing June 23, 1987. More than 6,150 individuals commented on this document. Opinions were expressed on the proposed additions to the CBRS in every affected State and Territory and on all of the proposed conservation and technical amendments to the CBRA.

The draft version of this supplemental Legislative Environmental Impact Statement was released for public comment on February 1, 1988 (Federal Register 53(20):2792). Comments on the draft LEIS and further comments on the 1987 draft report were accepted through March 17, 1988. The DOI received 23 comment letters specifically related to the draft LEIS during the comment period.

After reviewing all the public comments the DOI received on both the 1987 draft report and the 1988 draft LEIS, the DOI prepared a final Report to Congress. This final LEIS has been revised so that the Proposed Action is consistent with the DOI's final recommendations to Congress and to address the concerns raised by the commenters on the draft LEIS.

CHAPTER II

ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. Alternative A - The Proposed Action

1. Components of the Proposed Action

Under the Proposed Action, the following would be accomplished:

a. the addition to the CBRS of almost 791,000 acres of land (fastland and wetland) to the slightly less than one-half million acres currently in the System, for a total of 1,243,678 acres (see Tables 1 and 2).

b. the addition of undeveloped, unprotected secondary barriers, that is, those located in well-defined embayments, such as the Delaware Bay and Chesapeake Bay. This would add some 173 miles of shoreline and 67,210 acres to the CBRS (see Table 3).

c. the addition of undeveloped and unprotected coastal formations that function as coastal barriers but whose composition is not completely of unconsolidated sandy sediments, such as bedrock/glacial deposits in New England and the carbonate-cemented and mangrove shorelines of the Florida Keys, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands. The latter three areas, which constitute almost all of this group, contain 137 miles of shoreline and 133,669 acres (see Table 4).

d. the addition of the aquatic habitats associated with the 186 existing CBRS units, as well as those associated with the newly identified coastal barriers totaling approximately 95% of the acreage recommended for CBRS inclusion (see Table 2).

e. the addition of privately owned, undeveloped, and unprotected coastal barrier properties located within conservation or recreation areas established by Federal, State, or local law (inholdings). These cover approximately 12,000 acres.

f. the deletion from the CBRS of the three military installations and one Coast Guard installation in the existing CBRS. This would reduce the CBRS by about 42 miles of shoreline and 15,000 acres.

g. the adjustment to boundaries of units presently in the CBRS in order to correct discrepancies discovered during the study, such as an area

Table 1. Summary of changes in the CBRS under the Proposed Action (by State or Territory).

State or Territory	Number of existing CBRS units*	Number of units under Proposed Action	Shoreline length in CBRS (miles)	Shoreline length under Proposed Action (miles)	Total acreage in CBRS	Total acreage under Proposed Action	Fastland acreage in CBRS	Fastland acreage under Proposed Action
Maine	12	25	10.0	22.5	1,045	4,640	485	1,005
Massachusetts	44	60	70.7	119.3	17,214	66,290	3,871	6,904
Rhode Island	11	20	17.7	25.7	4,791	8,851	1,058	1,436
Connecticut	11	15	8.2	7.5	3,045	3,741	333	302
New York	12	42	21.0	45.0	4,635	18,399	1,131	1,965
New Jersey	0	8	0	13.5	0	5,486	0	396
Delaware	2	4	17.1	17.5	1,565	6,945	517	740
Maryland	0	36	0	28.0	0	7,163	0	1,605
Virginia	4	52	13.8	80.5	11,298	52,831	1,148	3,479
North Carolina	8	6	54.6	32.6	31,913	29,741	8,610	4,579
South Carolina	13	14	38.4	42.4	26,885	76,130	4,511	4,586
Georgia	6	6	16.2	19.9	33,073	64,255	5,126	5,506
Florida	33	65	118.8	172.4	61,575	305,200	19,378	39,511
Alabama	3	4	17.6	19.0	10,678	11,058	2,940	2,722
Mississippi	4	6	9.6	12.8	4,309	5,981	557	662
Louisiana	12	17	91.7	180.0	59,243	353,340	4,518	12,747
Texas	11	19	161.0	180.0	181,565	199,401	46,751	48,498
Puerto Rico	0	42	0	56.9	0	21,486	0	2,473
Virgin Islands	0	20	0	13.4	0	2,740	0	587
TOTAL	186	461	666.4	1,088.9	452,834	1,243,678	100,934	139,703

*D01 and D08 are counted in Rhode Island where most of these units are located. M01 is counted in South Carolina where most of it is located.

Table 2. Recommended increases or decreases in shoreline length and acreage in the CBRS under the Proposed Action.

State or Territory	Recommended Increase or Decrease in Shoreline Length (in miles)	Recommended Increase or Decrease in Acreage
Maine	+12.5	+3,595
Massachusetts	+48.6	+49,076
Rhode Island	+8.0	+4,060
Connecticut	-0.7	+696
New York	+24.0	+13,764
New Jersey*	+13.5	+5,486
Delaware	+ 0.4	+5,380
Maryland*	+28.0	+7,163
Virginia	+66.7	+41,533
North Carolina	-22.0	-2,172
South Carolina	+4.0	+49,245
Georgia	+3.7	+31,182
Florida	+53.6	+243,625
Alabama	+1.4	+380
Misissippi	+3.2	+1,672
Louisiana	+88.3	+294,097
Texas	+19.0	+17,836
Puerto Rico*	+56.9	+21,486
U.S. Virgin Islands*	+13.4	+2,740
TOTAL	+422.5	+790,844

*These States or Territories have no existing CBRS units; all of their acreage and shoreline lengths would be additions.

fully developed at the time the CBRA became law in 1982, or an area that does not qualify as a coastal barrier under the DOI criteria.

h. the addition of a provision to the CBRA that will enable the DOI to delete areas within the CBRS that become "otherwise protected" areas in the future, and the deletion of several areas in the existing CBRS that are currently otherwise protected.

i. the addition of a provision to the CBRA that will enable the General Services Administration (GSA) to add to the CBRS, before disposal, any excess Federal coastal barrier properties determined by GSA, in consultation with DOI, to be undeveloped, unless they otherwise qualify for exemption under the law.

j. the addition of a provision to the CBRA that would enable the DOI to add to the CBRS undeveloped barriers held for conservation or recreation purposes should the barriers be made available for development that would be inconsistent with the purposes of the CBRA.

Table 3. Secondary barriers in the existing CBRS and in the Proposed Action.

State or Territory	Number of Units		Shoreline Length (mi)		Acreage	
	Existing CBRS	Proposed Action	Existing CBRS	Proposed Action	Existing CBRS	Proposed Action
Maine	3	7	2.7	4.9	276	612
Massachusetts	8	13	9.2	17.1	1,496	4,677
Rhode Island	3	8	5.2	11.0	515	1,532
Connecticut	0	0	0	0	0	0
New York	3	25	5.2	21.7	743	6,542
New Jersey	0	5	16.3	9.7	0	3,335
Delaware	1	2	0	16.4	1,371	6,712
Maryland	0	36	0	28.0	0	7,163
Virginia	0	48	0	66.7	0	29,292
North Carolina	0	0	0	0	0	0
South Carolina	0	0	0	0	0	0
Georgia	0	0	0	0	0	0
Florida	0	7	0	12.8	0	6,314
Alabama	0	1	0	2.8	0	914
Mississippi	1	2	1.3	3.6	682	2,258
Louisiana	0	0	0.	0	0	0
Texas	0	8	0	18.5	0	2,942
Puerto Rico	0	0	0	0	0	0
Virgin Islands	0	0	0	0	0	0
	19	162	39.9	213.2	5,083	72,293
Net Gain under Proposed Action	143		173.3		67,210	

Table 4: Undeveloped and unprotected coastal barriers of the Florida Keys, Puerto Rico, and the U.S. Virgin Islands.

Area	Shoreline Length (in miles)	Acreage
Florida Keys	67.1	109,443
Puerto Rico	56.9	21,486
U.S. Virgin Islands	13.4	2,740
TOTALS	137.4	133,669

2. Definitions of Undeveloped, Unprotected Coastal Barriers

In response to the Congressional mandate in Section 10(c)(2) of the CBRA that the DOI's Report to Congress include recommendations for additions to, or deletions from the CBRS and modifications to the boundaries of the System, DOI reviewed and expanded its definitions of coastal barriers for use in the Section 10 study. The definitions that were developed are based on Section 3 of the CBRA and are supported by definitions used previously by the DOI as well as by the legislative history of the CBRA. The scope and definitions outlined below were used to identify the areas recommended for addition under the Proposed Action.

a. Geographic scope. When Congress passed the CBRA in 1982, it only included coastal barriers located on the Atlantic Ocean and Gulf of Mexico coastlines in the CBRS. The legislative history does not clearly indicate whether Congress intended to expand the CBRS eventually to include other coastlines; therefore, the Proposed Action does not include coastal barriers on coastlines other than the Atlantic Ocean and the Gulf of Mexico. The Proposed Action does include, however, the undeveloped, unprotected coastal barriers located in the Florida Keys, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands Territory, which were not included in the CBRS in 1982. These barriers border the Atlantic Ocean and are subject to the same dynamic forces and development pressures as the other Atlantic coastal barriers.

The inclusion of the undeveloped and unprotected coastal barriers of the Florida Keys, Puerto Rico, and the U.S. Virgin Islands would add 137 shoreline miles and 133,669 acres to the CBRS (see Table 4).

b. Coastal barrier composition. A coastal barrier is a depositional feature which generally consists of unconsolidated sedimentary materials, is subject to wind, wave, and tidal energies and protects landward aquatic habitats including the adjacent wetlands, estuaries, inlets, and shallow waters. Types of coastal barriers include barrier islands, bay barriers, barrier spits, and tombolos. Generally, coastal barriers are composed entirely of unconsolidated sediment composed of sand or gravel, but sometimes sediments include silt, cobbles, or larger rocks, or are consolidated. Three additional areas that function as coastal barriers are also included under the Proposed Action:

(1) Areas containing carbonate-cemented deposits, such as (a) local deposits of beach rock in tropical and semi-tropical regions that consist of carbonate-cemented gravel and/or beach sand underlain or overlain by unconsolidated sediment; and (b) cemented dunes, such as those found in Puerto Rico, where a carbonate-cemented dune line is located immediately seaward of a more or less typical coastal barrier, consisting of a beach (which may extend seaward to the cemented dune), dune, and mangrove. Cemented deposits may be local, as in the case of beach-rock, or extensive, as in the case of the emergent portions of the limestone deposits underlying the Florida Keys.

(2) Areas consisting primarily of silt and clay, such as (a) cheniers--narrow, wooded beach ridges that generally follow the shoreline and are parallel to and enclose marsh and mud-flat sediments on the landward side, characteristic of the southwestern Louisiana coast; and (b) fringing mangroves, nearshore deposits of silt and clay stabilized by mangroves as islands (overwash mangroves), and bands of mangroves along subtropical and tropical mainland shores in areas of low wave-energy, often located behind coral reefs. Fringing mangroves and associated reef systems are considered coastal barriers in tropical and subtropical areas because the protection afforded the associated aquatic habitats and the mainland is comparable to that given by coastal barriers that have a linear or curvilinear beach.

(3) Areas containing glacial and bedrock deposits when these consist of discontinuous outcrops of bedrock and coarse glacial deposits that make up less than 25% of a coastal barrier landform above mean high water. The substantial wave-energies in the area where glacial deposits occur (primarily New England) frequently move sediments and change their composition.

c. Associated aquatic habitat. Under the CBRA, an "undeveloped coastal barrier" is defined as including all associated aquatic habitats: "adjacent wetlands, marshes, estuaries, inlets, and nearshore waters." The original units of the CBRS, however, include only minimum aquatic habitats because the 1982 Congressional designations were based on Departmental delineations for a prohibition only on the sale of Federal flood insurance as required by the OBRA. Those delineations focused on the undeveloped fastland portion of the barriers where residential development might occur.

Under the Proposed Action, the associated aquatic habitat is defined as the entire area subject to diminished wind, wave, and tidal energies during a major storm because of the presence of the coastal barrier. It is delineated to include up to a 1-mile expanse of open water or a 5-mile expanse of marsh behind a barrier, including those Coastal Plain remnants seaward of the continuous Pleistocene landmass.

Coastal barriers protect the aquatic habitats between the barrier and the mainland. These aquatic habitats are critically important to many fish and wildlife species, including most of the Nation's commercial fish and shellfish harvest. The barrier and its associated aquatic habitats are one ecological system and the health and productivity of the entire ecosystem depends upon the rational use of all the component parts.

"Associated aquatic habitats" include all wetlands (e.g., tidal flats, swamps, mangroves, and marshes), lagoons, estuaries, coves between the barrier and the mainland, inlets, the nearshore waters

seaward of the coastal barrier including the sand-sharing system, and, in some tropical areas, the coral reefs associated with coastal mangroves. Under normal weather conditions, only aquatic habitats immediately adjacent to coastal barriers are exposed to direct wave attack. Major coastal storms and their associated wind and wave energies, however, routinely affect the entire landward aquatic habitat. Such habitats survive major storms because coastal barriers absorb the brunt of the ocean's energies. Storm waves break on the barrier beach, leaving a diminished storm wave to travel into the wetland. At the same time, the wetland stores storm flood waters, easing the flood pressure on the mainland.

Protection of the aquatic habitats between a coastal barrier and the mainland from wave attack during major storms has long been recognized as a fundamental function of coastal barriers. The expanded definition of associated aquatic habitats in the Proposed Action reflects the specific mandate in Section 10 of the CBRA to make recommendation for conservation of fish, wildlife, and other natural resources of the CBRS. All such associated aquatic habitats are inseparable parts of the coastal barrier ecosystem.

The associated aquatic habitats recommended for inclusion in the CBRS encompass about 752,075 acres.

d. Secondary barriers. Secondary coastal barriers are found in large bays or in lagoons on the mainland side of coastal barrier systems if a suitable sediment source and sufficient wind, wave, and tidal energy exist within the embayment. These secondary barriers, such as those in the Chesapeake Bay, Delaware Bay, and Narragansett Bay, are maintained primarily by waves generated internally by wind rather than open ocean waves. Consequently, they are generally smaller and more ephemeral than barriers directly fronting the ocean.

Irregularities in the shape of the beach and breaks in the continuity of the linear or curvilinear features are also characteristic of secondary barriers. Nonetheless, these secondary barriers protect important fish and wildlife habitats and provide substantial protection for the mainland during major storms in much the same fashion as primary coastal barriers.

In 1982 Congress included 19 secondary barriers (e.g., Broadkill Beach, Delaware, and Buzzard Bay Complex, Massachusetts) in the CBRS even though the DOI's 1982 criteria did not specifically address this part of the coastal zone. The Proposed Action would add 143 secondary barriers covering about 173 miles of shoreline and 67,210 acres to the CBRS (see Table 3 for State statistics).

e. Otherwise protected coastal barriers. Congress excluded from the CBRS undeveloped coastal barriers that are "included within the boundaries of an area established under Federal, State, or local law, or held by a qualified organization as defined in Section 170(h)(3) of the Internal Revenue Code of 1954, primarily for wildlife refuge,

sanctuary, recreational, or natural resource conservation purposes" (hereinafter referred to as "otherwise protected" areas). About one-third (34%) of the Atlantic and gulf coast falls into this otherwise protected category. In his 1982 Report to Congress on Undeveloped Coastal Barriers, the Secretary of the Interior recommended that otherwise protected areas be included in the CBRS to ensure that owners of property within the boundaries of these areas not be granted Federal flood insurance. In accordance with these concerns, otherwise protected coastal barriers on the Atlantic and gulf coasts have been identified (see Table 5).

A review by the Coastal Barriers Study Group, however, revealed that most of the federally subsidized development that occurs in protected areas is necessary to provide public access and accommodate visitors. More than 95% of the beach-oriented recreational use of federally protected areas occurs on coastal barriers. Much of this use is moderate- or low-intensity resource oriented recreational and educational activity. Although a few otherwise protected areas contain substantial amounts of "permanent" public recreational development, most are undeveloped, contain scattered development of a temporary or minimal nature (such as boardwalks, dune crossings, picnic areas, campsites), or contain only a single developed area of bathhouses and other facilities to support beach-oriented recreation.

Under the Proposed Action, all otherwise protected areas in the existing CBRS would be deleted from the System. However, the Proposed Action would also provide for automatic inclusion of otherwise protected, undeveloped coastal barriers should they ever be made available for development that is inconsistent with the CBRA purposes or the long-term conservation of the barrier. An amendment to the CBRA providing a legislative directive to the DOI to develop guidelines for acceptable development would also be necessary. These guidelines could be similar to the Secretary's Standards for Historic Preservation used to certify Historic Preservation Tax Credits and should be developed with opportunity for public comment. Lack of adherence to the guidelines would constitute justification for automatic inclusion in the CBRS. Federal expenditures in otherwise protected areas should support recreation, education, and conservation activities that are consistent with the maintenance of the natural environment. The DOI criteria used to judge acceptable development could include but not be limited to the following:

- the development is necessary to fulfill the purposes of the area;
- the development and its use can be accommodated on the barrier without significantly interrupting natural geological or ecological processes; and
- the development is located landward of the primary dunes and on the most stable portion of the barrier.

The Proposed Action would also include all privately owned property within but not a part of an otherwise protected area on an undeveloped coastal barrier (inholdings) in the CBRS.

Table 5. Number of otherwise protected areas identified on undeveloped coastal barriers on the Atlantic Ocean or Gulf of Mexico coasts.

State or	Federal Protection	State/Territory Protection	Local Protection	Private Protection	
Maine	5	5	2	0	
Massachusetts	3	9	14	1	
Rhode Island	4	8	8	0	
Connecticut	2	6	4	3	
New York	8	10	31	0	
New Jersey	3	8	1	1	
Delaware	1	7	0	1	
Maryland	4	12	1	0	
Virginia	6	5	3	5	
North Carolina	3	5	1	2	
South Carolina	3	6	1	2	
Georgia	5	5	0	1	
Florida	23	41	20	3	
Alabama	2	3	0	2	
Mississippi	1	0	0	0	
Louisiana	3	5	0	0	
Texas	7	19*	1	1	
Puerto Rico	3	21	2	2	
Virgin Islands	13	0	0	1	
Total	99	175	89	25	
				Grand Total	388

*Includes General Land Office lands behind existing and proposed CBRS units.

f. Military and Coast Guard lands. The CBRS includes some 15,000 acres of military and Coast Guard land, including about 42 miles of shoreline on four installations. After consultation with the DOI, "military activities essential to national security" (Section 6(a)(4)) are exempt from the restrictions of the CBRA. The DOI understands that most military activities along the Atlantic Ocean and Gulf of Mexico coasts are essential to National security. Under the Proposed Action, all military and Coast Guard lands in the existing CBRS would be deleted from the System and no new military or Coast Guard lands would be added to the CBRS.

g. Development status. The definitions of development presented in the 1983 FES were also used to identify undeveloped barriers under the Proposed Action (i.e., less than one structure per 5 acres of fastland and at least 1/4-mile shoreline length), except that phased development was not considered. Physical evidence that infrastructure is in place to each unit in the development must be present

before an area is considered developed. This infrastructure must be provided by the developer, thereby demonstrating his commitment to imminent construction.

3. Delineation of Undeveloped, Unprotected Coastal Barrier Units

Once an undeveloped, unprotected coastal barrier was identified according to the definitions presented above, delineation of units included under the Proposed Action was accomplished in the following manner.

a. Delineation of undeveloped portions of barriers. The undeveloped portions of coastal barriers were delineated according to the following criteria.

(1) Where an undeveloped area adjoins continuous development, the boundary line is drawn generally perpendicular to the undeveloped shoreline across the entire coastal barrier and the associated aquatic habitat at the break in development.

(2) Where an undeveloped area contains isolated clusters of approximately ten or more structures and the impact of the development on geological and ecological processes is local and confined primarily to the fastland on which the structures are located, a boundary line is drawn around the cluster of development to exclude it from the unit.

(3) In cases of partially undeveloped coastal barriers, only the associated aquatic habitat that is behind the undeveloped portion of the coastal barrier is included in the unit.

b. Delineation of landward boundaries. On the landward side, the boundary encompasses the core of the barrier itself as well as the associated aquatic habitats consisting of wetlands, shoals, islands, channels, and open water landward of the fastland portion of the coastal barrier.

(1) In general, the landward boundary of a coastal barrier is a continuous line which follows the interface between the aquatic habitat and the mainland, as defined on topographic maps or aerial photographs by a change in vegetation. The boundary was not drawn more than 5 miles landward of the mean high water line on the unprotected side of the coastal barrier.

There are four types of aquatic environments that occur landward of coastal barriers that require special delineation criteria.

(2) An open body of water greater than one mile wide exists landward of the coastal barrier. Here, the boundary is drawn through the open water about one mile landward of the farthest landward extent of wetlands on the protected side of the barrier. If there exists a discernible natural or artificial channel, the boundary is

drawn along the side nearest the coastal barrier. If a political boundary exists in the open water about one mile landward of the coastal barrier, it is used as the landward boundary.

(3) Continuous wetland extends more than five miles landward of the coastal barrier. Generally, the boundary is drawn through the wetlands along an identifiable natural or artificial channel, or a political boundary nearest to the 5-mile limit in the manner described immediately above. If such features are lacking, the boundary is drawn through the wetland, generally parallel to and 5 miles landward of the mean high water line at the seaward side of the coastal barrier.

(4) Coastal Plain remnants present special delineation problems, especially along the coasts of South Carolina, Georgia, and northeastern Florida. These isolated upland landforms are located within the coastal zone between the present shoreline and the more continuous uplands of the Coastal Plain and are the result of coastal sedimentation at a higher stand of sea level than the present one. Coastal Plain remnants are generally surrounded by wetland habitats. Where all or part of the Coastal Plain remnant is responding to modern wind, wave, and tidal energies, it is treated as a primary or secondary barrier. Where the Coastal Plain remnant is not significantly impeding or altering the process in the surrounding wetlands due to large size or high elevation, it is included in the associated aquatic habitat up to 5 miles landward of the present shoreline. Where Coastal Plain remnants begin to form a more-or-less continuous line within the wetlands, the landward boundary is drawn along the seaward margin of the Coastal Plain remnants, excluding them from the unit.

(5) Watercourses flow into the aquatic habitat from the mainland. The boundary line is drawn at the first natural or artificial constriction with the drainage landward of the coastal barrier.

c. Delineation on the seaward side. Each coastal barrier unit contains the entire sand-sharing system, including the beach, shoreface, and offshore bars. The sand-sharing system under the Proposed Action is normally delineated on the seaward side by the 30-foot bathymetric contour. For secondary barriers the sand-sharing system is more limited in extent and is defined by the 20-foot bathymetric contour line or a line approximately one mile seaward of the shoreline, whichever is nearer the coastal barrier.

d. Adjustments to boundaries. Several areas included in the CBRS in 1982 were incorrectly defined as undeveloped or they were incorrectly delineated according to DOI criteria. Under the Proposed Action, these inconsistencies would be corrected.

B. Alternative B - No Action

Under the No Action alternative, no changes would be made in the existing CBRS.

1. Geographic Scope

Under the No Action alternative, the geographic scope of the CBRS would remain the same and no new areas would be added to the System. The Florida Keys, Puerto Rico, and the U.S. Virgin Islands would not be added to the CBRS. The barriers of the States of New Jersey and Maryland also would not be included in the CBRS. About 180 miles of shoreline and 150,000 acres would be excluded from the CBRS in these five areas.

2. Coastal Barrier Composition

Under the No Action alternative, those coastal barriers not composed entirely of unconsolidated sandy sediments, such as carbonate-cemented deposits, cheniers, fringing mangroves, and coral reefs, would not be added to CBRS. Approximately 213 miles of shoreline and 270,000 acres would be lost to the CBRS.

3. Associated Aquatic Habitat

Under the No Action alternative, no additional associated aquatic habitat would be added to the CBRS. About 95% of the total acreage recommended for addition to the CBRS, or about 752,075 acres, is associated aquatic habitat. The entire associated aquatic habitat protected by a coastal barrier is a vital part of that ecosystem. This component of the No Action alternative would act at counterpurpose with the specific mandate in Section 10 of the CBRA to make recommendations for the conservation of fish, wildlife, and other natural resources of the CBRS.

4. Secondary Barriers

Under the No Action alternative, no secondary barriers in the Chesapeake Bay and other large bays and lagoons on the Atlantic and gulf coasts would be added to the CBRS. Omitting the secondary barriers would exclude some 67,210 acres of coastal barriers with 173.3 miles of shoreline from the CBRS. Five of the eight units recommended in the State of New Jersey, 48 of the 52 units recommended in Virginia, and all of the 36 units recommended in the State of Maryland are secondary barriers. Together these States' secondary barriers comprise almost 40,000 acres, or about 59% of the secondary barrier total. Bays are vitally important areas for commercial and sport fish, as well as other fish and wildlife. The No Action alternative, in excluding secondary barriers from the CBRS, would leave out a link in the chain of protection for coastal fish and wildlife.

5. Otherwise Protected Coastal Barriers

The approximately 24,000 acres of otherwise protected areas in the existing CBRS would remain in the System under the No Action alternative. Privately owned property located within but not a part of an otherwise protected area on an undeveloped coastal barrier--the inholdings--would not be included in the CBRS.

The No Action alternative would also overlook the benefit of including, in the future, any otherwise protected, undeveloped coastal barriers held for conservation purposes should they ever be made available for development that is inconsistent with the purposes of the CBRA. Table 5 lists the the location of the 388 otherwise protected areas on the Atlantic and gulf coasts.

6. Military and Coast Guard Lands

Under the No Action alternative, some 42 miles of shoreline and 15,000 acres of coastal barrier land on three military installations and one Coast Guard facility would remain in the CBRS. Military activities essential to National security are exempt from the restrictions of the CBRA (Section 6) after consultation with DOI. The construction, maintenance, and rehabilitation of Coast Guard facilities and access to them are also exempted (also Section 6).

The No Action alternative also would not allow any military or Coast Guard lands on an undeveloped coastal barrier to be automatically added to the CBRS should they become excess or surplus Federal property and otherwise qualify for addition to the CBRS.

7. Adjustments to Boundaries

Several areas included in the CBRS were incorrectly defined as undeveloped coastal barriers or inconsistently delineated at the time of inclusion in 1982. The No Action alternative would perpetuate these inaccuracies.

The major elements of the Proposed Action and the No Action alternatives are compared in Table 6.

C. Scoping (Other Alternatives Considered)

In addition to the two alternatives, the Proposed Action and No Action, which have been presented in some detail in this supplement, two other major alternatives were considered in the 1983 FES: the Limited Alternative and the Broad Alternative. The Broad Alternative would include otherwise protected coastal barriers and coastal barriers on the Great Lakes, the Pacific Coast, Alaska, Hawaii, and American Samoa in the CBRS. During 1983-85, the Coastal Barriers Study Group gathered preliminary information about undeveloped coastal barriers on all U.S. coastlines and solicited public comments on their inclusion in the CBRS. A Broad Alternative, however, was not considered in detail here because the legislative history of the CBRA does not clearly indicate whether Congress intended to expand the CBRS to include barriers on other coastlines. Because Congressional intent is unclear and there is so much controversy surrounding expansion to other coastlines, the DOI does not plan to complete studies of other coastlines unless directed to do so. A Limited Alternative was not considered in detail here because there was no systematic way to limit proposed additions and still keep the alternative distinct from the No Action Alternative. The various elements considered

Table 6. Comparison of elements of the Proposed Action and No Action alternatives.

Variable	Proposed Action	No Action
1. Geographic scope	Atlantic Ocean, Gulf of Mexico coasts, including the Florida Keys and coasts of Puerto Rico and U.S. Virgin Islands.	Atlantic Ocean and Gulf of Mexico coasts. The Florida Keys, Puerto Rico, and the U.S. Virgin Islands are not added to the CBRS.
2. Composition of coastal barriers	Primarily unconsolidated sediments, but also includes certain consolidated sediments (e.g., carbonate-cemented deposits), cheniers, fringing mangroves, and glacial/bedrock deposits.	Barriers composed of consolidated sediments or silt/clay are not added to the CBRS.
3. Associated aquatic habitat	The entire aquatic habitat subject to diminished wind, wave, and tidal energies during a major storm because of the presence of a coastal barrier is included in the CBRS: up to a one-mile expanse of open water or a five-mile expanse of marsh behind a barrier. Also includes the coral reef systems associated with fringing mangroves in tropical areas.	No additional associated aquatic habitat is added to the CBRS. The existing CBRS units only include aquatic habitats having a strong geographic and ecologic relationship with the coastal barrier.
4. Secondary barriers	Barriers located in large bays or in lagoons behind coastal barrier systems are added to the CBRS.	Secondary barriers are not added to the CBRS.

(Continued)

Table 6. (Concluded).

Variable	Proposed Action	No Action
5. Protective ownership	All privately owned property within but not a part of an otherwise protected area on an undeveloped coastal barrier (inholdings) are added to the CBRS.	Inholdings are not added to the CBRS.
	All otherwise protected lands currently included in the CBRS are deleted. Any otherwise protected area would be automatically included in the CBRS if ever made available for development inconsistent with purposes of the CBRA.	Otherwise protected areas currently in the CBRS would remain in the System. Otherwise protected coastal barriers made available for development would not be automatically added to the CBRS.
6. Military and Coast Guard lands	All military and U.S. Coast Guard lands currently included in the CBRS would be deleted. Any military and Coast Guard land on an undeveloped barrier that becomes excess/surplus would be subject to automatic inclusion in the CBRS.	Three military installations and one Coast Guard station with about 15,000 acres of land and 42 miles of beachfront would remain in the CBRS. Excess military and Coast Guard lands on undeveloped coastal barriers would not be automatically included in the CBRS.
7. Adjustments to boundaries	Boundaries of the CBRS would be adjusted to delete areas that were incorrectly defined as undeveloped in 1982 or do not qualify as coastal barriers according to DOI criteria.	All boundaries of the CBRS would remain the same.

in the Limited and the Broad Alternatives in the 1983 FES are presented in summary form in Table 7.

The 1985 draft National inventory was accompanied by a draft text report which also considered a range of alternatives for conservation of the CBRS, including acquisition, regulatory amendments to the CBRA, and tax law amendments. Public comment was also solicited on these alternatives. Volume 1 of the final CBRS Report to Congress discusses these alternatives in depth and presents the DOI's recommendations on each.

1. Acquisition

The NPS and FWS are authorized to collect recreation fees which are deposited in the Land and Water Conservation Fund (LWCF) and used to acquire lands for the National Park System and the National Wildlife Refuge System. The FWS is also authorized to use Federal duck stamp revenues deposited in the Migratory Bird Conservation Fund (MBCF) for acquisitions. Both the LWCF and the MBCF employ the user-fee approach to land acquisition.

Since enactment of the CBRA, several CBRS units have been acquired for recreational or conservation purposes, including Shackleford Banks (NPS--Cape Lookout National Seashore), part of Mobile Point (FWS--Bon Secour National Wildlife Refuge), and several areas in Florida (for the State park system). Acquisition, however, has been limited because of the excessive cost of acquiring prime beach real estate. It is pursued on a case-by-case basis as determined necessary by individual land-managing agencies.

In the CBRS Report to Congress, the DOI recommends that the Federal Government continue to employ the user-fee concept in acquisition of CBRS lands as appropriate. Acquisition is not economically feasible for the entire CBRS.

2. Regulatory Consistency

Although the CBRA restricts Federal funding of new construction within CBRS units, it does not prevent Federal agencies from issuing permits for activities within or adjacent to CBRS units. These activities have the potential for adversely affecting the fish and wildlife resources of the CBRS or creating risks to human safety. Amending the CBRA to require that Federal permits for activities within or adjacent to the CBRS be consistent with the purposes of the CBRA is one option for addressing this problem.

Requiring regulatory consistency at the Federal level, however, would depart from the basic CBRA premise that conservation can be achieved without increasing Federal regulatory involvement by simply withdrawing Federal financial support for development of undeveloped coastal barriers. Furthermore, most States have additional regulatory safeguards that also serve the purposes of the CBRA. These include wetland protection programs, construction setback requirements, and

Table 7. Comparison of elements in other alternatives considered in the 1983 FES.

Variable	Limited Alternative	Broad Alternative
Geographic coverage	Coasts of the Atlantic Ocean and Gulf of Mexico.	All coasts of the United States and its territories, and major embayments on Atlantic Ocean and Gulf of Mexico coasts (i.e., Pacific Ocean coast, Alaska, Hawaii, American Samoa, Great Lakes, Puerto Rico, U.S. Virgin Islands, and large, well-defined bays, e.g., Chesapeake and Delaware Bays).
Sediment characteristics	Unconsolidated and only if of recent geologic age. Excludes areas of beach rock.	Unconsolidated and regardless of geologic age; including local beach rock deposits; also areas having a consolidated core of coquina, coral limestone, or other marine calciferous rock.
Wind, wave, and tidal energies	Excludes the portions of coastal barriers least subject to flooding (those outside the 100-year floodplain) and landfall of hurricane-force storm; linear/curvilinear features must be present. Coastal barriers in bays or lagoons excluded.	Susceptibility to flooding and storm damage not considered; ocean-facing marsh and mangrove islands lacking linear/curvilinear features included, as are coastal barriers in bays or lagoons.
Associated aquatic habitats	Only fastlands and aquatic habitats completely surrounded by fastlands included.	Continuous aquatic habitat landward of the coastal barrier, as well as submerged portion of the sand-sharing system on the seaward side included.
Portions thereof	A minimum ocean-facing shoreline of 1.0 mile.	A minimum ocean- or bay- or Great Lake-facing shoreline of 0.1 mile.

(Continued)

Table 7. (Concluded).

Variable	Limited Alternative	Broad Alternative
Impacts of human activities	Demonstrable geologic or ecologic impact considered in all cases.	Impacts not considered; delineation based solely on density of structures.
Protective ownership	All publicly owned lands, regardless of purpose, and lands held by private organizations for purposes stated in Section 6(a) of the CBRA not designated as undeveloped coastal barriers excluded.	Protected areas included regardless of location on coastal barrier, provided the area contains not less than ten contiguous acres held in fee or as easement for protection.
Few human-made structures	Structures defined as all buildings, developments, and facilities occupying 200 square feet or more.	Structures defined as walled and roofed buildings occupying 200 square feet or more.
	Minimum allowable density set at less than one structure per five acres per fastland.	Maximum allowable density set at more than one structure per five acres of fastland.
	Appurtenant structures included in determining density.	Appurtenant structures not included in determining density.
	Phased development projects excluded regardless of size.	Phased development plans not considered in determining development status
Full complement of infrastructure	Vehicle access required to subdivision only; reasonable availability of utilities required to subdivision only.	Infrastructure not considered.

post-storm reconstruction policies to control development on barriers. Therefore, in the CBRS Report to Congress, the DOI recommends no regulatory amendments to the CBRA.

3. Tax Amendments

Over the years since the Internal Revenue Code was enacted, the tax system has exerted a pervasive influence on the decisions of private individuals and businesses. In coastal communities, tax-induced distortions have had significant costs in terms of lost property, public revenues, and natural resources. A tax policy that is neutral toward development decisions on coastal barriers could reduce impacts on the fish, wildlife, and other natural resources of the CBRS. Adjustments in Federal tax policy could result in conservation by allowing development in the CBRS to be based on market signals, basically unaltered by Tax Code provisions.

Based on this logic, the 1985 draft report devoted considerable discussion to possible tax amendments for conservation of the CBRS. In 1986, however, the Tax Reform Act made sweeping changes in the Internal Revenue Code. A guiding principle of the Act was the reduction of the Code's interference with the economic decisions made by individuals and businesses. The Act changes many of the provisions in the Code that interfered with market decisionmaking.

In the CBRS Report to Congress, the DOI recommends no tax law amendments at this time. The DOI believes that having just enacted a major tax reform after two years of debate and legislative effort, a period of stability and certainty in the tax law is necessary. The Department of the Treasury has also assured the DOI that the interpretation of the rules issued under Section 170 of the Code, the section governing conservation easements, has not adversely affected charitable contributions within the CBRS.

D. Mitigating Measures

There are no mitigating measures directly connected to the Proposed Action. The entire law to which it is related, the CBRA (P.L. 97-348), is designed to mitigate potential losses of the environment by prohibiting in the designated CBRS, Federal expenditures for development that might diminish the environment on coastal barriers.

CHAPTER III

AFFECTED NATURAL ENVIRONMENT

The coastal barriers of the Atlantic Ocean and Gulf of Mexico coasts make up one of the longest and best defined chains of coastal barriers in the world. These features generally parallel the mainland coasts and to varying degrees enclose and thereby protect aquatic habitats, such as estuaries and marshes, as well as the mainland from direct wave assault from the open seas. With the exception of the Florida Keys, Puerto Rico, the U.S. Virgin Islands, and secondary barriers, the natural environments of coastal barriers and their associated aquatic habitats are discussed completely in the 1983 FES. Only a brief summary of that information appears below; the natural environments of the Keys, Puerto Rico, the Virgin Islands, and secondary barriers, however, are discussed in detail.

A. General Overview of Coastal Barrier Processes

1. Generally, coastal barriers can be divided into five interrelated ecosystems: (1) coastal marine, (2) maritime, (3) estuarine, (4) freshwater (riverine, etc.), and (5) uplands on mainland (Figure 1). Characterized by a unique combination of geological and biological features, each ecosystem is molded by the physical influences of winds, waves, tides, currents, precipitation, and river flow patterns.

2. As one might expect, there is a high degree of regional diversity within the chain of coastal barriers. The diversity is determined by spatial changes in the physical processes. The land forms that develop are shaped by the dominant physical factors of tidal range, wave energy, sediment supply from riverine sources, and the distribution of older coastal sand bodies that supply the barrier sediments.

3. Local sea-level rise is also of great significance. Fairly accurate sea level records have been kept around the world over the last century. These indicate that global sea level has increased about 12 cm over the past 100 years, implying an annual global average rate rise of 1.2 mm--a figure that does not give rise to great concern. Many parts of the U.S. coastline, however, are subsiding at the same time, making the local sea-level rise appear much greater: about 1 foot in the last century. Subsidence is especially great along the central Gulf of Mexico coast, where the weight of the Mississippi delta muds, withdrawal of groundwater from shallow aquifers, and extraction of oil and gas contribute to subsidence of the land surface.

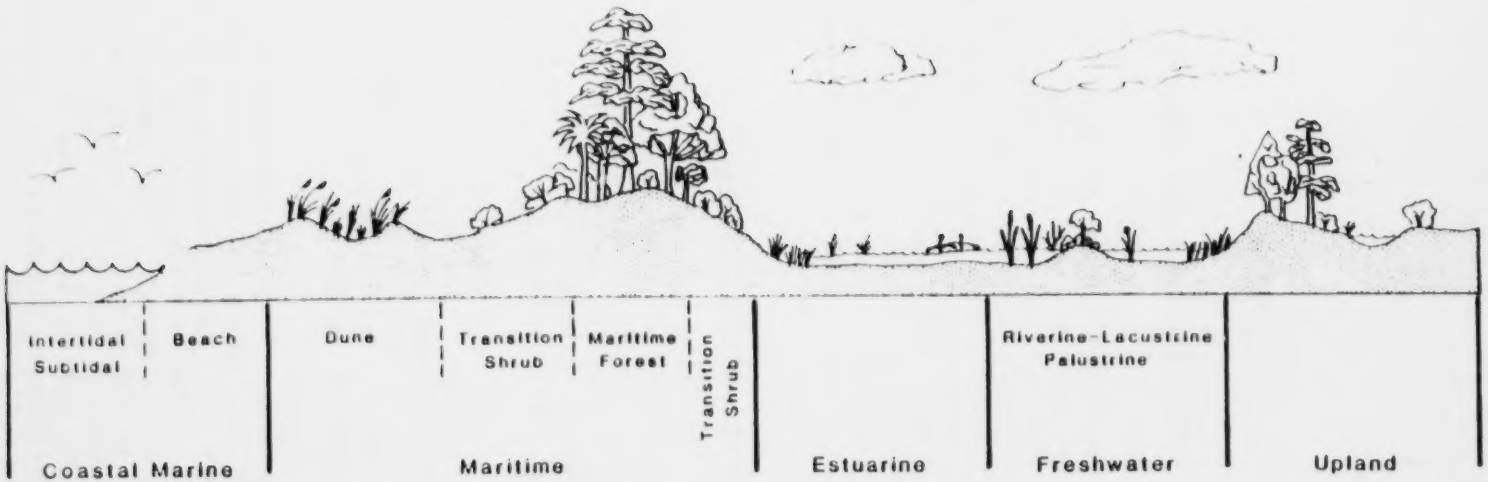

Figure 1. Generalized cross-section of sandy coastal barrier ecosystems.

There is also evidence that global warming as a result of the release of carbon dioxide and other greenhouse gases into the atmosphere will, in time, accelerate the worldwide rate of sea-level rise. The EPA and the National Academy of Sciences have estimated a 3-to-5-foot rise in sea level along the U.S. coast over the next century because of these processes.

Coastal barriers typically respond in one of two ways to sea-level rise; they may drown beneath the rising waters, or they may move landward continuously by erosion along the shoreface and overwash. Although there is controversy among scholars on the issue, it appears that at least some of the Gulf of Mexico's barriers are drowning, while most barriers along the Atlantic coast are moving landward. The potential impacts of rising sea level on coastal barriers are discussed in greater detail in Volume 1 of the CBRS Report to Congress.

4. The coastal barriers--both those now in the CBRS and those being recommended for inclusion in the CBRS--have three environmental characteristics in common: (a) they are subject to wind, wave, and tidal energies; (b) they protect associated aquatic habitats and consequently the fish and wildlife in those associated aquatic habitats; and (c) they protect the mainland. Coastal barriers also share three common characteristics important to people: (a) they protect the vast commercial and recreational fisheries found in associated aquatic habitats; (b) they are hazardous sites for permanent human occupancy, much more hazardous than sites on the coastal mainland; and (c) because of their high susceptibility to natural disasters, they are sites where reoccurring use of Federal monies for development and redevelopment affect all American taxpayers.

B. Natural Environments of the Florida Keys

The word "key" comes from the Spanish work "cayo," which means small, low-lying island. The Florida Keys are a narrow, elongated chain of 97 low-lying islands extending in an arc from south and west of Miami to the Dry Tortugas about 235 miles away. Geologically, the Keys are composed of two limestone belts. The long linear islands from Key Largo to Bahia Honda Key consist of reef limestone (Key Largo limestone and Miami oolite), while the more irregular islands, those trending somewhat more northwesterly, from Big Pine Key to Key West, consist of cemented granular limestone.

The Key Largo formation is an old Pleistocene coral reef. Numerous pits or holes in the surface of the Keys' limestone, referred to as breccias and created by dissolution of the rock, are apparent. These pits act as storage areas of coral debris, organic soils, and other loose material (Krawlec 1977). About 2 to 5 miles offshore, a living coral reef runs parallel to the Keys. All sand in the Keys is calcium carbonate. It consists primarily of the skeletal remains of the calcareous green alga Halimeda opuntia, mollusks, and foraminifera; coral debris; and Pleistocene limestone rubble (Jindrich 1969, Enos 1977). Sand is limited in the Keys; most is found in a series of small tidal deltas on both sides of the tidal passes separating the individual keys and in small pocket beaches between limestone headlands. The shallow Florida Bay, filled with carbonate

mudflats, seagrass beds, and small mangrove islands, separates the Keys from the south Florida mainland. Fringing mangroves typically front the Keys where beaches are absent. Figure 2 presents a generalized cross-section of the Keys.

The Florida Keys do not fit the definition of a coastal barrier as an accumulation of unconsolidated sediments in that their core is composed of Pleistocene limestone. However, the Keys do function as coastal barriers and share a number of characteristics with sandy barriers. They are both subject to wind, wave, and tidal energies and to severe flooding and damage by hurricanes, and they both protect landward aquatic habitats. The Florida Keys provide the quiet-water environment of Florida Bay.

The abundant coral reefs and seagrass beds in the Florida Keys support a great variety of recreationally and commercially important shellfish resources. Among these are spiny lobsters, stone crabs, and pink shrimp. These habitats also support large numbers of fish. In fact, the combination of favorable water temperatures, variety of habitats, and abundance of nutrients results in an extremely rich fish fauna of over 500 species. Many of the fish, particularly members of the snapper and grouper families, provide important recreational and commercial fisheries.

The fringing mangrove communities along the Keys have been described by Odum et al. (1982). Characteristically, red mangroves (Rhizophora mangle) grow along the shoreline and black mangroves (Avicennia germinans) grow farther inland, in the intertidal and supratidal zones. Mangroves are productive ecosystems which support a high diversity of fish, birds, and other wildlife. The mangrove food web, based largely on leaf detritus, also supports nearshore fisheries. The distinctive red mangrove prop roots provide vital nursery habitat for juvenile fish and shellfish. They also trap sediments and over a period of several years can extend the shoreline seaward.

Upland vegetation is found on some keys where elevations are sufficient. On the northern keys and Big Pine Key, hardwood hammocks, unique assemblages of tropical and semitropical trees and shrubs, are found. Caribbean slash pine stands (Pinus elliottii vars. densa) occur on the islands surrounding and including Big Pine Key (Schomer and Drew 1982). Uplands on the southern Keys support pines, thatch palms, palmettos, shrubs, and grasses in communities similar to those on the south Florida mainland.

Major storms have assaulted the Keys on many occasions and their impacts are well documented. The most dramatic of these was a hurricane that hit the Keys in 1935. This hurricane was one of the most violent in U.S. history, with a recorded barometric pressure of 26.35 inches and winds exceeding 200 mph (Shepard and Wanless 1971). That hurricane destroyed virtually all human-made structures in the Matecumbe area, including the railroad under construction between Miami and Key West, and killed 400 people. The railroad was abandoned, but its route was used later for U.S. Highway 1. The level topography of the Keys makes human-made structures on

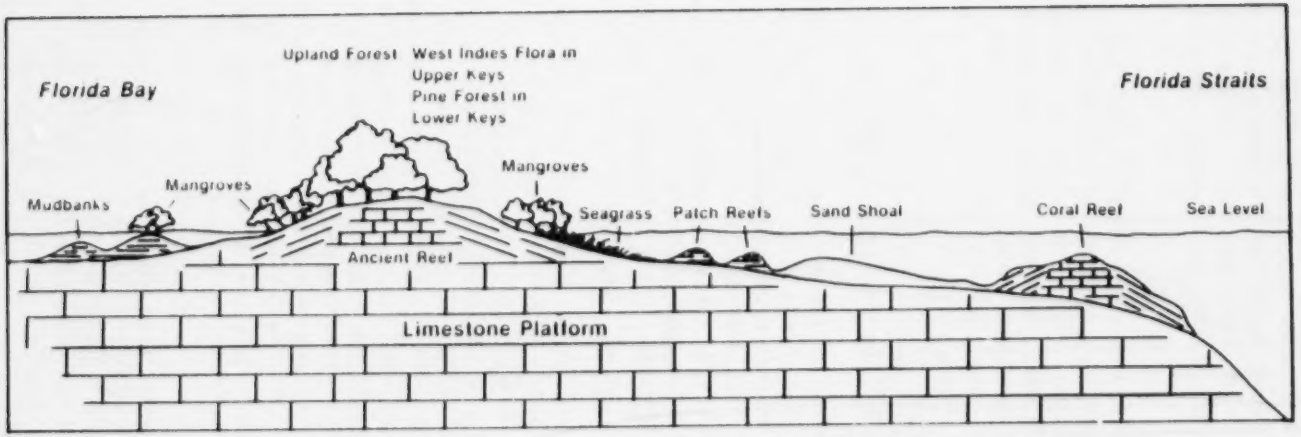

Figure 2. A generalized cross-section of the Florida Keys (from Pilkey, Jr., et al. 1984).

them as vulnerable to destruction by hurricanes as those on the lowest profile, mostly washover-prone sandy coastal barriers.

Geologically, however, the Keys react differently to hurricanes than sandy barriers do, as documented in a study of Hurricane Donna in 1960 (Ball et al. 1967). The active reefs of the Keys are broken down, producing large amounts of rubble, and the sandy material is moved across and between the Keys, accumulating on flats in Florida Bay. There is little physical change in island shape brought about by storms, however, because of the hard limestone.

Hurricane landfall frequencies are very high in the Keys (Figure 3). The mean annual offshore wave energy, however, is the lowest of any sector along the United States' coast. This combination of generally peaceful waters with occasional hurricanes carries great potential danger because the human inhabitants--many of whom have not resided in the Keys for long--and the visitors are not generally prepared for the potential devastation of storm hazards there.

C. Natural Environments of Puerto Rico and the U.S. Virgin Islands

Puerto Rico is the easternmost island of the Greater Antilles. The U.S. Virgin Islands, consisting of St. Croix, St. Thomas, St. John, and about 90 smaller islands, lie about 40 miles east and southeast of Puerto Rico. Puerto Rico, St. Thomas, and St. John are on the Puerto Rican plateau; St. Croix, 35 miles to the south, is on a separate submerged ridge. As a transition zone between oceanic and continental plates, the Caribbean island arc is an active earthquake zone. Tsunamis have occurred in the area.

The coastal barriers on Puerto Rico and the U.S. Virgin Islands often differ from the curvilinear, sandy barriers found on the east coast of the continental United States. Along the north coast of Puerto Rico, a carbonate-cemented dune line is located immediately seaward of a more typical coastal barrier consisting of beach, dunes, and mangroves. In other areas, deposits of beach rock--carbonate-cemented gravel--overlay or underlay the unconsolidated sediments on the barrier. Fringing mangroves occur in many areas. The mangroves stabilize nearshore deposits of silt and clay in low wave-energy environments. Many of these fringing mangroves occur behind coral reefs. Fringing mangroves and associated coral reef systems are considered coastal barriers in tropical and semitropical areas because the protection they provide is comparable to that provided by linear or curvilinear sandy barriers.

The mangrove communities in Puerto Rico and the U.S. Virgin Islands consist of red mangroves (Rhizophora mangle) growing along the shoreline and black (Avicennia germinans) and white (Laguncularia racemosa) mangroves in the interior. Off the south coast of Puerto Rico there are mangrove islands (cays) with red mangroves near shore and black mangroves in the interior. Like those in Florida, the mangroves in Puerto Rico and the U.S. Virgin Islands support abundant fish and wildlife resources.

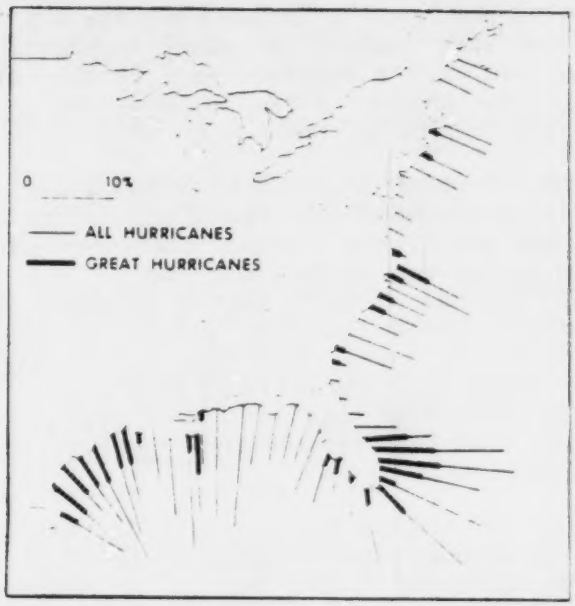

Figure 3. Annual hurricane landfall probabilities in the United States (from Nummedal 1983, data compiled from Simpson and Lawrence 1971). Notice high probabilities in the two Florida Keys sectors.

In some parts of Puerto Rico and the U.S. Virgin Islands, fringing mangroves or coral reefs grow across a portion of a bay, isolating it from the waters in the rest of the bay. Coral rubble and sand transported by storm waves can contribute to closing off a pond. Beaches and salt ponds commonly occur together, and black and white mangroves frequently fringe the edges of the pond. These ecosystems support a specialized biota that varies with fluctuations in the salinity of the pond water. Several species of birds, including kingfishers, herons, ospreys, stilts, and sandpipers, feed on the insects, brine shrimp, and fishes in the ponds. Salt ponds located between an upland watershed and its associated bay function as settling or catchment basins, trapping runoff from the land and contributing to the maintenance of high water quality in the bay.

Coral reefs and seagrass beds also are highly productive and they are extensive in the shallow waters around Puerto Rico and the Virgin Islands. The coral reefs provide shelter for several important fishes during the day, while the grass beds provide food for them at night. Both the reefs and seagrass beds buffer storm wave energies, providing critical protection for harbors and reducing shoreline erosion. The resources harvested from coral reefs include fish, octopuses, conchs, and spiny lobsters. Reef erosion produces sand for the beaches.

D. Cheniers

The Chenier Plain of the western Louisiana coast, between Vermilion Bay and the Sabine River, is geologically unique along the U.S. coastline. It owes its origin to the vast amounts of muddy sediments discharged by the Mississippi River and to the moderate wave climate of the north-central Gulf of Mexico. The Chenier Plain is separated from the Mississippi Deltaic Plain to the east by Southwest Pass, which is 150 feet deep.

Mud from the mouths of the Mississippi River has always been transported to the west by the prevailing westward-flowing coastal currents off Louisiana. For the last 3,000 years, the Chenier Plain has been a site of rapid coastal accretion in response to this mud supply. The growth, however, has not been uniform. Periods of rapid mudflat accretion have alternated with periods of coastal retreat. During phases of retreat, the coarser sediments, primarily shell-hash, have been concentrated and deposited as linear ridges or "cheniers." These ridges attain local elevations above 10 feet and are the only high and relatively dry ground in Cameron and Vermilion Parishes. The land between the ridges is at or only a few feet above sea level and permanently wet.

The Chenier Plain is fronted by mudflats instead of the usual sandy beaches. Fluid mud extends from the seaward edge of the marsh grasses to a few hundred yards offshore. This mud is an extremely effective wave absorber; the mainland shore is rarely exposed to any wave action except during storms.

Technically, the chenier ridges do constitute barriers protecting the wetlands on their landward side. The danger of inhabiting the chenier ridges is fully comparable to that of living on barrier islands, as was demonstrated when Hurricane Audrey flooded most of Cameron Parish in 1957 and killed an estimated 500 people.

The extensive brackish and freshwater marshes separated by the cheniers support over 100 species of birds including at least 18 species of waterfowl. Many migrating songbirds which cross the Gulf of Mexico stop over on the coastal hardwood areas along the crests of the chenier ridges. The cheniers also support numerous mammals, including furbearers such as mink, river otter, raccoon, nutria, and muskrat.

The Chenier Plain, like the Mississippi Deltaic Plain to the east, yields large numbers of finfish and shellfish, especially brown and white shrimp and menhaden. Other major recreational and commercial estuarine dependent fisheries include blue crab, spotted seatrout, drum, croaker, spot, sheepshead, and flounder. Alligators, once an endangered species in Louisiana, are also commercially harvested in large numbers in the Chenier Plain.

E. Secondary Barriers

When Congress passed the CBRA in 1982, it included within the CBRS 19 units that are secondary barriers: 3 in Maine, 8 in Massachusetts, 3 in Rhode

Island, 5 in New York, 1 in Delaware, and 1 in Mississippi. The Proposed Action includes 143 secondary barriers. The natural environments of secondary barriers are similar to those described in the 1983 FES for low-profile primary barriers.

Three areas serve as examples of bay shoreline where secondary barriers exist: Narragansett Bay, Rhode Island; Delaware Bay, Delaware; and Chesapeake Bay, Maryland and Virginia. The natural environments of these bays are briefly described here as representative of areas where secondary barriers are located.

Narragansett Bay, a large bay and estuary system extending some 28 miles inland, gives Rhode Island a considerable amount of shoreline. Considered the most important natural resource in the State, the bay and estuary system has salt marshes, shallow-water habitats, sand beaches, tidal flats, coves, other bays, and rocky shores. The habitats that the bay provides for shellfish, finfish, and waterfowl--many protected by secondary barriers--are extremely important. Many of these habitats, however, have been seriously impacted by human activities.

The 65- to 70-mile estuarine shoreline in Delaware Bay, Delaware, varies with ocean influence strongest around Lewes, near the bay's mouth, and riverine influence more prominent north of Wilmington. From Lewes northward to Smyrna/Woodland Beach, it is common to see large marsh areas accompanied by narrow beaches and low dune ridges. These areas are heavily populated by waterfowl in autumn when the Atlantic flyway is used by thousands of migrating waterbirds. The saltwater and brackish water environments contain large populations of flounder, striped bass, sea bass, bluefish, perch, sturgeon, spot, drum, Atlantic croaker, shad, crabs, and clams. The barriers provide protection for the bay's habitats as well as the mainland.

The Chesapeake Bay, with nearly 1.5 million acres of water and 4,000 miles of undulate shoreline, is the largest estuary in the United States. It extends almost 200 miles from the Conowingo Dam on the Susquehanna River to Capes Henry and Charles at the mouth of the bay to the south. The bay is generally shallow and protected from high energy ocean influences. Wetlands are extensive, particularly along the eastern side of the bay. Because the Chesapeake is so large and contains a wide variety of habitats, it supports a great diversity of fish and wildlife resources. The distribution of various species depends on salinity, depth of water, time of year, and the availability of suitable habitat.

Estuarine shellfish species, especially blue crabs and oysters, make up a significant portion of the Chesapeake's valuable commercial harvest. Menhaden is the most valuable finfish in the bay and makes up the majority of the commercial fishing poundage. In addition, many of the Atlantic coastal fishes of North America are spawned and spend a critical part of their lives as juveniles in Chesapeake Bay.

Chesapeake Bay also provides habitat for more than 75% of the waterfowl migrating along the Atlantic coast. About one million ducks and geese

winter in the tidewater areas. The most numerous and widely distributed ducks include mallards, canvasbacks, black ducks, scaups, and scoters.

F. Otherwise Protected Coastal Barriers

In 1982, Congress excluded from the CBRS areas that are "included within the boundaries of an area established under Federal, State, or local law, or held by a qualified organization as defined in section 170(h)(3) of the Internal Revenue Code of 1954, primari y for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes" (CBRA Section 3(1)(B)(ii)). Otherwise protected areas fall into two classes: (1) conservation or recreation areas established by Federal, State, or local law on an undeveloped coastal barrier, or (2) privately owned, undeveloped coastal barriers held for conservation purposes, as, for example, by The Nature Conservancy or National Audubon Society. The natural environments of these properties are the same as the environments of unprotected coastal barriers as described in the 1983 FES and in this supplement.

CHAPTER IV

ENVIRONMENTAL CONSEQUENCES

The environmental consequences of adopting the Proposed Action are directly related to the changes in development patterns it will induce; however, there is a high level of uncertainty about what changes in development patterns will occur. For the purposes of this analysis, various assumptions about the degree and the nature of development changes were necessary. In general, we assumed that adopting the proposal would result in some unquantified reduction in development of the coastal barriers included in the Proposed Action. Where it was possible to extrapolate from development trends in the existing CBRS to the proposed additions, this was done; however, these occasions were infrequent. In some sections, a situation is presented where we assumed that all development in the proposed additions would be curtailed.

A. Impact-producing Factors

The aggregate environmental impacts of the Proposed Action and No Action alternatives should be determined by three major factors: (1) the geographic scope of the actions, (2) the availability of financing for construction or purchase of residential property, and (3) the ability and willingness of State and local communities to control development. Each of the factors is discussed briefly below.

1. Geographic Scope

The criteria for defining and delineating the proposed additions to the CBRS were described previously and are fully discussed in Volume 1 of the CBRS Report to Congress. As indicated therein, the geographic scope of the Proposed Action includes the aquatic habitats associated with undeveloped, unprotected coastal barriers, secondary barriers (e.g., those in Chesapeake Bay, Delaware Bay, and Narragansett Bay), the Florida Keys, the chenier region along the coast of southwestern Louisiana, and Puerto Rico and U.S. Virgin Islands.

2. Availability of Financing

Coastal barriers are extremely vulnerable to recurring property damage from hurricanes and other major storms, shoreline erosion, and sea-level rise. This creates a high risk for lending institutions if disaster assistance and flood insurance are not available from the Federal Government. The risk is especially great in developed and rapidly developing areas where damage to a large number of structures during a single major storm could have extremely serious economic impacts on local private financial institutions.

Where Federal Flood Insurance is not available, private financial institutions are generally unwilling to make loans for development. Under these circumstances, the developer must assume the entire financial risk. Whether State or local governments are willing to finance the building of roads, airports, boat landings, or other facilities on coastal barriers, or bridges or causeways to coastal barriers, without the benefit of Federal financial assistance is a factor that individual property owners and developers must also consider.

3. Ability and Willingness of State and Local Governments to Control Development

The impacts of prohibiting Federal assistance for development on undeveloped coastal barriers will depend substantially on the response of the State and local governments, which will be under increased pressure to assume some of financial burden formerly borne by the Federal Government. The high cost of maintaining development on coastal barriers without Federal assistance will, we assume, serve as an incentive for State and local governments to control the growth in the undeveloped coastal barriers to achieve the lowest possible development density.

B. Impacts on the Natural Environment

1. No Action Alternative

From 1950 to 1980, development on coastal barriers increased from about 10% (about 250 miles of coastal barrier shoreline) to about 40% (about 1,050 miles) of the available real estate. In 1980, it was estimated that about one-third of the developable land acreage of our coastal barriers had been developed. That percentage is undoubtedly greater today. The conversion of undeveloped land has resulted in significant and very widespread impacts on the natural environment along our coastlines. Under the No Action alternative, these trends would be expected to continue. Their effects are discussed below.

a. Impacts on geological and ecological processes. The general impacts of development on geological and ecological processes on sandy coastal barriers are discussed fully in the 1983 FES. Some of the proposed additions have unique characteristics not covered by the 1983 FES. These characteristics change the way these barriers respond to development and are discussed below.

(1) Secondary barriers. Secondary barriers are located in large, well-defined bays or lagoons. They are created and maintained primarily by waves generated within the embayment rather than in the open ocean. Consequently, they are more ephemeral than barriers directly fronting the ocean. Development is less likely on these secondary barriers.

Conclusion: Under the No Action alternative, some development is expected to occur and probably would contribute to the same kinds of impacts that occur on ocean-facing barriers.

(2) Cheniers. The cheniers of southwestern Louisiana were formed as muds from the Mississippi River were transported westward by currents and deposited as long, linear ridges along the shoreline. Because the towns in the chenier region are growing, development on the cheniers can be expected to continue and may increase.

Conclusion: Under the No Action alternative, development in the cheniers is expected to occur. This development would probably contribute to the loss of unique forested hammocks and the degradation of significant fish and wildlife habitat which supports thriving fur, fish, and shellfish industries.

(3) Florida Keys. Unlike coastal barriers composed of unconsolidated sediments, the core of the Keys is composed of Pleistocene limestones. By changing drainage patterns and focusing runoff, development on these limestones can contribute to the dissolving and undermining of the rock. Acidic groundwater moving along the joints and bedding planes in the rock leaches away some of the limestone, creating underground caverns and drainage holes. In central Florida where similar limestones exist, there has been an increase in land subsidence and collapse as development progressed. Dissolution of the limestone also increases the turbidity of runoff water, which has significant negative impacts on the aquatic habitats protected by the Keys, including the only substantial living coral reefs in the continental United States. Sediment particles settling from turbid waters smother the reef organisms, inhibit coral recruitment and growth, and reduce the amount of light available for photosynthesis.

Development on the Keys also destroys tropical and semitropical upland habitats that support endemic species, some of which are threatened or endangered. There are a number of unique hammock communities scattered throughout the Keys that are threatened by development. Development also increases pollution as runoff carries contaminants into the aquatic habitats.

Because the Florida Keys are composed of limestone rock and are not migrating, development there will not contribute to shoreline erosion problems as it does on sandy barriers. However, rising sea level will contribute to a loss of beachfront property over the long term.

Monroe county predicts a total peak population (including both permanent and seasonal residents) increase between 1983 and 2005 of 52.8% (Hammer, Siler, and George Associates for Monroe County, 198').

Conclusion: Under the No Action alternative, development pressures in the Keys will remain intense and related impacts are expected to occur.

(4) Puerto Rico and the U.S. Virgin Islands. The unique features in Puerto Rico and the Virgin Islands include carbonate-cemented dunes, fringing mangroves, and coral reefs. Like sandy barriers, if these barriers are destroyed by development, the landward habitats will be exposed to the full force of the ocean's energies. The coastal barrier ecosystems of Puerto Rico and the U.S. Virgin Islands and the development status of each proposed addition are described in detail in an Island Resources Foundation report (1985) prepared for the Department of the Interior.

Although residential development on mangroves and coral reefs is less likely than on fastlands, development-related activities such as dredging do occur in these habitats. Cutting or filling mangroves, which trap sediments, can result in excessive siltation in nearby aquatic habitats from runoff after heavy rains. Mangroves, especially red mangroves with their submerged prop roots, provide vital habitat for juvenile fishes and a variety of wildlife. Coral reefs are among the most productive marine habitats and support commercially important fish and shellfish.

Industrialization and tourism have placed enormous demands on the coastal resources of Puerto Rico and the U.S. Virgin Islands. The population of the U.S. Virgin Islands has tripled in the last three decades. The pressures on coastal barriers are evident as marinas, hotels, and condominiums continue to be built.

Conclusion: Under the No Action alternative, development can be expected to continue at high levels, particularly along the north shore of Puerto Rico and on St. Thomas and St. Croix in the U.S. Virgin Islands. The impacts on the natural systems are expected to be significant.

b. Impacts on species requiring special protection. Development of undeveloped coastal barriers on the Atlantic Ocean and Gulf of Mexico coasts during the next 20 years will have significant impacts on many of the 34 animal species associated with barriers and known to require special protection to maintain healthy populations. These impacts are discussed in detail in the 1983 FES (Chapter IV and Appendix A).

The proposed additions of secondary barriers, cheniers, and associated aquatic habitat include no additional species requiring special protection that are not discussed in the 1983 FES. Impact on those species requiring special protection in the Florida Keys, Puerto Rico, and the U.S. Virgin Islands are discussed below.

(1) Florida Keys. The isolation of the Florida Keys from the mainland is believed to be responsible for the distinctive endemic populations of reptiles, amphibians, and mammals. Although over 40 species of reptiles and amphibians are found in the Florida Keys, decreasing habitat and lack of freshwater have contributed to the sparse distribution of some species, and many are listed as

endangered (e.g., Atlantic ridley, hawksbill, and green sea turtles, and the American crocodile) and threatened (e.g., Atlantic loggerhead turtle, Florida ribbon snake, Key mud turtle).

A number of birds with special status are found in the Florida Keys. These include Kirtland's warbler, white-crowned pigeon, great white heron, magnificent frigatebird, roseate tern, brown pelican, bald eagle, and peregrine falcon. Numerous wading birds, including the great blue heron, snowy egret, and roseate spoonbill, and shorebirds such as the snowy plover, American oystercatcher, sooty tern, and laughing gull, are also present. The Keys serve as temporary stopping sites for many migrating land birds which arrive in early spring and fall each year. While land bird distribution in the Keys is limited by availability of habitat, the region is a virtual haven for coastal aerial-feeding birds, such as terns and gulls, because of the abundant marine life and relatively shallow waters. The Great White Heron National Wildlife Refuge protects North America's largest wading bird, the great white heron, found only in the Keys and southern Florida. The only known nesting sites for magnificent frigatebirds, sooty terns, and brown noddies in the continental United States are located in the Keys.

Few species of mammals are found in the Florida Keys because suitable terrestrial habitat is lacking. Those species that are present show a high degree of endemism because of their isolation from mainland populations (Schomer and Drew 1982). Unique species include the Key Vacca raccoon, Key Largo woodrat, Key Largo cotton mouse, silver rice rat, and the diminutive Key deer, which is only as tall as an average size dog. The National Key Deer Refuge includes several islands and contains nearly all of the 300 to 400 Key deer remaining (Beccassio et al. 1982).

Conclusion: Under the No Action alternative those species requiring special protection will most likely continue to suffer loss of habitat and other development-related impacts. The extremely limited distribution of the Key's endemic species makes them particularly vulnerable to development.

(2) Puerto Rico and the U.S. Virgin Islands. The beaches, mangroves, seagrass beds, and coral reefs of Puerto Rico and the U.S. Virgin Islands support a high diversity and abundance of animal species. Over 40 threatened and endangered species use the habitats associated with coastal barriers, including red- and white-billed tropicbirds, the West Indian whistling duck, the Caribbean coot, the white-crowned pigeon, the green sea turtle, the St. Croix ground lizard, and the Puerto Rican boa. A complete list of the species of special emphasis that are found in Puerto Rico and the U.S. Virgin Islands appears in Table 8.

Conclusion: Because of the enormous demands that industrialization and tourism are placing on the coastal environments of Puerto Rico and the U.S. Virgin Islands, under the No Action alternative, species

Table 8. Species of special emphasis and endangered and threatened species and their occurrence in Puerto Rico and U.S. Virgin Islands. E = endangered on the Federal list; T = threatened on the Federal list; LE = locally endangered; LT = locally threatened (Philobosian and Yntema 1977, Norton 1983, Puerto Rico Department of Natural Resources 1984).

Species	Puerto Rico	St. Thomas	St. John	St. Croix	Status
Birds					
Least grebe	X	X	X	X	LE
Red-billed tropicbird	X	X	X	X	LE
White-tailed tropicbird	X	X	X	X	LE
Brown pelican	X	X	X	X	E
Blue-faced booby	X	X			
Red-footed booby	X	X			LE
Magnificent frigatebird	X	X	X	X	LE
Great blue heron	X	X	X	X	LE
Great egret	X	X	X	X	LE
Snowy egret	X	X	X	X	LE
Black-crowned night heron	X		X	X	LE
Least bittern	X				LE
Glossy ibis	X				LE
West Indian whistling duck	X				LE
Bahama duck	X	X	X	X	
American wigeon	X	X	X	X	LE
Northern pintail	X				LE
Ring-necked duck	X		X		LE
Masked duck	X				LE
Ruddy duck	X	X			LE
Osprey	X	X			LE
Peregrine falcon	X		X	X	E
Clapper rail	X	X	X	X	LE
Purple gallinule	X				LE
Caribbean coot	X	X	X	X	LE
Piping plover	X				
Snowy plover	X			X	LE
Willet	X	X	X	X	LE
Short-billed dowitcher	X	X	X	X	LT
Common tern	X	X			LT
Roseate tern	X	X	X		LE
Least tern	X	X	X	X	E
Royal tern	X	X	X	X	LT
Sandwich tern	X				LT
White-crowned pigeon	X	X	X	X	LT
Plain pigeon	X				LE

(Continued)

Table 8. (Concluded).

Species	Puerto Rico	St. Thomas	St. John	St. Croix	Status
Key West quail dove	X				LT
Bridled quail dove	X	X	X		LT
Puerto Rican parrot	X				E
Reptiles					
Green sea turtle	X	X	X	X	T
Hawksbill	X	X	X	X	E
Loggerhead	X				T
Leatherback	X	X	X	X	E
Common iguana	X	X	X		
St. Croix ground lizard				X	E
Blue-tailed ground lizard	X				
Slipperyback skink	X	X			
Puerto Rican tree boa	X				E
Tree boa	X	X			T
Ground snake	X	X			
Mammals					
Fisherman bat	X	X	X	X	
Red fruit bat	X	X	X		
Sperm whale	X	X			E
Humpback whale	X	X	X	X	E
West Indian manatee	X				E

requiring special protection will most likely continue to suffer losses.

c. Impacts on wetlands. Continued development of undeveloped coastal barriers will probably cause significant direct and indirect impacts on the wetlands associated with them. About 95% of the proposed additions are associated aquatic habitats. Associated aquatic habitats include marshes, tidal flats, and shallow open waters protected by coastal barriers. Although habitat alterations in wetlands are much more tightly controlled than those on fastlands through a variety of State and Federal regulations, any wetland degradation has substantial impacts on fish and wildlife resources. The effects of development on wetlands are discussed in detail in the 1983 FES.

The impacts on wetlands are likely to be greatest in the Sun Belt States and the Caribbean where development pressures are greatest.

As the less flood- and erosion-prone areas are developed, development pressures on the more low-lying and hazardous real estate, which is less suitable for development, are expected to rise. This would increasingly place the wetlands in jeopardy. This trend may also make it more difficult for State and local officials to hold the line on marginal developments, partially offsetting the benefits from stronger regulations.

Conclusion: Under the No Action alternative, a progressive decline in the amount and productivity of wetlands because of development-related interference with geological and ecological processes and direct displacement or destruction of wetlands by dredging and filling is expected.

2. Proposed Action

a. Impacts on geological and ecological processes. The Proposed Action would approximately triple the acreage and add about 423 miles of shoreline to the CBRS (Table 2). Any decline in the rate of development as a result of withdrawing Federal assistance in these areas is expected to maintain the natural geological and ecological processes because there will be fewer structures to interfere directly with sediment transport, less construction damage, less vehicle damage, less trampling and breaching of dunes, and, in some areas, less need in the future to manipulate shorelines for hurricane protection and erosion control than would otherwise occur. Similarly, reduced disturbance of the land surface should allow native vegetation to stabilize the shifting sediments of sandy coastal barriers naturally, and should help maintain the barriers' important functions in protecting the mainland and associated aquatic habitats from storm waves and tides. Reduced disturbance should also assist in maintaining the productivity of landward aquatic habitats and the biological diversity of the coastal barriers themselves.

Any decline in the rate of development in the Florida Keys that results from the Proposed Action is expected to help to preserve the integrity of the limestone core of the Keys and to maintain the unique hammocks and other natural communities. A decline in the rate of development should also slow the potential increase in the amount of pollution entering the associated aquatic habitats. In Puerto Rico and the U.S. Virgin Islands, any decline in the rate of destruction of mangroves should help to maintain the water quality by not impairing the sediment-trapping function of these habitats.

The effects of reduced or delayed development pressure on natural processes should be greatest in Florida and the Caribbean where large additions are proposed and the largest acreages of potentially developable fastland are available. In the northeast and mid-Atlantic States, the proposed additions are mostly secondary barriers, which have a lower suitability for development. Although Louisiana has the largest acreage proposed for addition of any State, the vast majority of this acreage is associated aquatic habitat that

is generally unsuitable for development. Most of the potentially developable land is in the chenier region of southwestern Louisiana.

Conclusion: The Proposed Action is expected to favor the continued operation of natural geological and ecological processes wherever the withdrawal of Federal assistance results in curtailed development. This should help maintain the natural functions of these coastal barrier systems, including storm protection for the mainland, maintenance of productive wetland and open water aquatic habitats which support valuable fish and shellfish, and natural removal of water-borne pollutants.

Over the last few years several State and local governments have developed land-use plans and other regulations which will result in future development that is more consistent with natural geological and ecological processes. Any delays in development that the Proposed Action induces will allow these plans to be fully implemented and result in more environmentally sound development over the long term.

b. Impacts on species requiring special protection. On undeveloped coastal barriers of the Atlantic Ocean and Gulf of Mexico coasts, habitat supporting or suitable for species requiring special protection will have a reduced probability of disturbance or destruction resulting from continued development and associated human activities under the Proposed Action. Species with very restricted ranges, like the endemic species in the Florida Keys and the Caribbean, would benefit most from the Proposed Action. Examples include great white heron, brown noddy, white-crowned pigeon, Key deer, and American crocodile in the Florida Keys; and Caribbean coot, West Indian whistling duck, Bahama duck, masked duck, and Puerto Rico boa in the Caribbean. The five species of federally listed endangered sea turtles, which use the beaches of coastal barriers for nesting, should benefit from less disturbance of suitable nesting habitat. The expected positive effects would be greatest in Florida, Texas, and the Caribbean where the amount of suitable habitat on undeveloped coastal barriers is large.

Many birds not totally dependent on coastal barrier habitat but using such habitat during migration or for nesting or wintering--notably the whooping crane (southeast Texas coast), other wading birds and shorebirds, bald eagles and Arctic peregrine falcons--will benefit from any reduction in rates of development and other human activities that degrade wetlands. Brown pelicans have benefitted from human-made nesting areas.

Conclusion: The Proposed Action should reduce the probability of development-related disturbance or destruction of habitat which supports species requiring special protection. Any delay or reduction in development is expected to improve the status of these species and provide time to prepare and implement management plans for their long-term protection.

c. Impacts on wetlands. The Proposed Action will reduce the probability of development-related impacts on about 752,075 acres of associated aquatic habitat. Although it has been argued that relatively few activities in wetlands are directly subsidized by the Federal Government, development of the fastland portions of coastal barriers with Federal assistance frequently results in the loss of wetlands through dredging and filling for the marinas and small boat channels that are a vital part of these developments. As more and more restrictions are placed on beach-front construction and beach-front property costs skyrocket, developers are shifting their projects to the back sides of coastal barriers, and boat access to the project becomes highly desirable. For example, the proposed developments for Boca Chica (T12), Texas, would involve substantial dredging and filling in the wetlands to provide these amenities.

Development on the fastland also leads to wetland degradation as a wide variety of pollutants are washed into the surrounding aquatic habitats. The frequent closure of large numbers of shellfish beds in the vicinity of developed coastal barriers is evidence of this.

As mentioned previously, wetlands are extremely valuable habitats for a large number of fish and wildlife species. Any loss of these habitats is expected to have significant repercussions for these species.

Conclusion: The Proposed Action is expected to result in less wetland disturbance, degradation, and destruction wherever the withdrawal of Federal assistance results in curtailed development.

C. Impacts on the Socioeconomic Environment

1. No Action Alternative

Under the No Action alternative, conditions and trends described in Appendix A of the 1983 FES are expected to continue in the areas proposed for addition to the CBRS (see Section D, Land Use and Local Economy; Section E, Hazards; and Section F, Aesthetic, Cultural, and Scientific Resources). Information to update and supplement this material is incorporated in the analysis below.

a. Impacts on aesthetics. Under the No Action alternative, development would most likely continue in response to current market forces. Opportunities for those human activities requiring natural aesthetic values (e.g., nature study, photography, hiking) would be reduced as development occurs.

Conclusion: The No Action alternative should result in a reduction of the natural aesthetic qualities of undeveloped coastal barriers wherever development occurs.

b. Impacts on recreation. The qualities, extent, and use of recreational facilities on coastal barriers are described at length in Appendix A, Section D, of the 1983 FES.

Conclusion: The No Action alternative may reduce opportunities for unstructured public recreation (e.g., fishing, swimming) as coastal barrier open areas are converted to private development. However, development may provide additional private recreation facilities.

c. Impacts on owners and developers of residential property. Since World War II, development on coastal barriers has accelerated, supported by an increasing amount of Federal assistance, especially for roads and other infrastructure, and the National Flood Insurance Program. Under the No Action alternative, Federal financial assistance for development and Federal flood insurance would continue to be available. Although the availability of flood insurance is not by itself the determining factor in decisions to develop, the availability of financing may be contingent upon the availability of Federal flood insurance. It is likely that a portion of today's market is supported indirectly by the availability of Federal flood insurance and that the rate of residential development depends, perhaps substantially, on this factor.

Conclusion: The No Action alternative would probably encourage continued residential and commercial construction on coastal barriers, primarily by effectively underwriting private sector financing which might not otherwise be available, and by subsidizing the cost of roads, bridges, and utilities. The resulting economic stimulation should be greatest in Florida, Puerto Rico, and the U.S. Virgin Islands where the proposed additions are large.

d. Impacts on local communities. Coastal barriers are highly desirable for vacation homes as well as retirement and bedroom communities. The U.S. Census Bureau estimates that by 1990, 75% of the population will live within 50 miles of the coast. Excluding the secondary barriers and the associated aquatic habitat in Louisiana, approximately 80% of the proposed additions are located near established communities. The development of these areas should have economic benefits for local markets, employment, and tax bases over the short term. Federal subsidies for post-disaster reconstruction may result in even higher levels of development than existed on the barrier before a storm, as was the experience on west Galveston Island, Texas, following Hurricane Alicia in 1983 (McCloy and Huffman 1987). This development, however, may entail long-term economic costs associated with beach nourishment, erosion control, channel maintenance, pollution control, and declining productivity of fisheries that depend upon a natural system.

Conclusion: Under the No Action alternative, local communities will probably continue to grow and this growth should provide economic benefits for local markets and tax bases. This growth, however, may also incur long term economic costs associated with erosion and pollution control.

e. Impacts on public safety. Continued development will expose increasingly greater numbers of people to storm hazards (see Section E of

Appendix A in 1983 FES). In the Florida Keys and South Texas (e.g., Padre Island) where distances to the mainland are great, population increases associated with development may overburden existing evacuation capabilities.

Conclusion: The No Action alternative should result in increasing public safety risks as development occurs.

f. Impacts on the economics of Federal subsidies. It is likely that the No Action alternative would result in federally assisted development in many of the proposed new CBRS units. Fastland comprises about 39,000 acres of the proposed additions. For the purposes of this analysis, the DOI has considered the fastland as the only potentially developable land. Based on four case study locations, Miller (1981) estimated that the cost of extending the current Federal assistance programs to undeveloped coastal barriers is approximately $25,570 per developed acre in 1980 dollars (Miller 1981). The assistance included in these estimates were monies for the construction of roads, bridges, airports, water and sewer systems, for Federal flood insurance, and for disaster relief. The total estimated cost to the Federal government of extending assistance to all of the potentially developable land in the proposed additions is about $997 million over the period of development ($25,570/acre X 39,000 acres). Miller estimates replacement costs for post-disaster redevelopment of coastal barriers at $53,250 per developed acre. This would translate to a total replacement cost of $2.08 billion for the proposed additions.

Conclusion: Under the No Action alternative, there will be recurring costs to the Federal government of perhaps as much as $2.08 billion.

g. Impacts on cultural resources. Under the No Action alternative, development in the proposed additions will continue and could result in an increased likelihood of damage or destruction of undiscovered historic and archeological sites, especially shell middens and the remains of structures.

Conclusion: The No Action alternative may have adverse impacts on undiscovered historic and archeological sites.

2. Proposed Action

a. Impacts on aesthetics. To the extent that the Proposed Action limits development, it is expected to contribute to maintaining the natural aesthetic qualities of the beaches, dunes, shrublands, forests, and wetlands of undeveloped coastal barriers. For many people using these coastal barriers, these qualities provide recreational enjoyment and psychological enrichment.

In the absence of Federal assistance, two development scenarios have been suggested by the public. In the first, high-cost developments are constructed only by wealthy individuals or large developers who

can afford the risks associated with unassisted development. In the second, low-cost developments lacking aesthetic amenities (i.e., beach or fishing shacks) are constructed. These could be lost in a storm without unacceptable financial hardship. In the existing CBRS units, there is some evidence to support the first scenario (e.g., the U.S. Capitol Corporation development, Mobile Point, Alabama), and virtually none to support the second. If the first scenario occurs in the proposed additions, landscaping and architectural design features associated with the development would contribute to maintaining some aesthetic qualities on these barriers, although natural elements would be lost.

Conclusion: Under the Proposed Action, natural aesthetic qualities should be maintained wherever development is curtailed. Landscaping and architectural design features associated with high-cost developments could contribute to maintaining aesthetic qualities where unassisted development occurs.

b. Impacts on recreation. The Proposed Action should tend to perpetuate existing opportunities for unstructured recreation (hiking, beachcombing, surf fishing, unsupervised swimming, nature study) requiring natural coastal barrier environments. In places where there are limited opportunities for these activities (i.e., New Jersey, Florida, the U.S. Virgin Islands, and Puerto Rico), the availability of even small areas for such uses in the proposed additions could result in significant public benefits, particularly in places where public access exists. Difficulties in financing development may increase the willingness of some owners to sell their property for conservation or recreation purposes.

Conclusion: Under the Proposed Action, existing opportunities for unstructured recreational activities requiring natural coastal barrier environments should be perpetuated. If owners are encouraged to sell their property for conservation or recreation purposes, increased opportunities for public recreation would be the likely long-term result.

c. Impacts on owners and developers of residential property. The principal socioeconomic impacts of prohibiting the sale of Federal flood insurance and other Federal assistance for new development in the proposed additions will be on owners and developers of coastal barrier property. In a situation in which development is totally suppressed--for example, where construction loans and mortgages become unavailable--impacts might be:

A probable decline in market values in the proposed additions; a probable increase in property values on developed and developing coastal barriers.

Probable financial losses for developers who have substantial investments in the property but have not secured the financing for construction.

- Unavailability of bank financing for those individuals wanting to construct personal residences.
- Low to negligible impacts on property owners who do not require financing and who can accept the risk of building on a coastal barrier, or who can arrange special financing as a business or similar property arrangement.
- Possible change in type of residential construction toward (a) more elaborate vacation and retirement communities for those able to build without bank financing; and (b) inexpensive "beach shacks," constructed to provide buildings as cheaply as possible under local building codes and floodplain management ordinances so that flood losses could be absorbed by the property owners.

On those coastal barriers within the existing CBRS, two contrary situations now exist. In most units, development has apparently been curtailed. In several units, however, substantial development has occurred despite the barriers inclusion in the CBRS. In North Bethany Beach, Delaware (H01); Topsail, North Carolina (L06); Cape San Blas, Florida (P30); Moreno Point, Florida (P32); and Mobile Point, Alabama (Q01), substantial public infrastructure (e.g., roads and utility lines) already existed at the time the units were placed in the CBRS. The developers apparently reasoned that they would make more profit continuing with the planned development than by abandoning it.

Daufuskie Island, South Carolina (M13) is a special case. When this unit was put in the CBRS, there was no evidence of planned development. Although there is no bridge to the island and none will be allowed by the State of South Carolina, developers have proceeded with several large projects. Although bridge access usually determines whether a coastal barrier island will be developed, Daufuskie demonstrates that strong market forces can override this factor. Access to Daufuskie is by a private ferry system.

There is substantial public concern that placing properties in the CBRS will reduce their market value. To date, the evidence on this topic is mixed. At condemnation proceedings for Shackleford Banks, North Carolina (L03), the Federal Government argued that the market value of this property was reduced because it is in the CBRS. The jury rejected this argument. It provided an indemnity far higher than that recommended by the appraisers.

There are no data to indicate whether or not development pressures have increased, thereby increasing property values, on nearby coastal barriers outside the CBRS. In view of the complexity of market forces, this effect would be difficult to quantify.

As discussed under "Impacts on Aesthetics," there is some evidence that residential development in the CBRS tends to be high-cost and elaborate. This suggests that there are enough wealthy buyers interested in coastal barrier property to support development in some of the CBRS units.

Conclusion: Under the Proposed Action, impacts on owners and developers of residential property will be mixed. Some level of negative impact is probable.

d. Impacts on local communities. A wide variety of factors determine the economics of development in local communities. Among these are the amount of developable land, the development pressures in the community, the State and local regulations, the potential investment return, and the attractiveness of the location. It is extremely difficult to isolate the potential impacts of including an area in the CBRS from the impacts of these other factors on the decision to develop a particular parcel of land.

For example, part of South Padre Island in Texas was included by the Congress in the CBRS in 1982 while another undeveloped 7½-mile stretch was left out. To date, no development has occurred in either part of the island.

Many people have suggested that inclusion in the CBRS would result in loss of employment opportunities, a reduction in the potential tax base, and a general decrease in the local economy. It would be extremely difficult to demonstrate that this is true because it is not possible to isolate individual causes of economic trends. Local communities that are under intense development pressures and located adjacent to CBRS units or proposed additions are most likely to experience some negative impacts on their economies. This would suggest that local communities in Florida, especially the Keys, Puerto Rico, and the U.S. Virgin Islands have the greatest potential for experiencing economic impacts from the Proposed Action.

In the 1983 FES, a situation was presented in which it was assumed that the suppression of development as a result of withdrawing Federal assistance would be nearly complete. Making this same assumption, using estimates of potential development density (0.095 structures/acre/year) and value ($100,000/structure) presented in the 1983 FES, and estimating the developable acreage in the proposed additions at 39,000 acres (as discussed previously), total development worth about $7.41 billion (in 1980 dollars) would be foregone over the next 20 years. Although such a situation is unlikely, the cutoff of Federal assistance will create an unfavorable climate for development in many areas, resulting in some curtailment of construction activities.

Some of the economic losses associated with foregone development within the proposed additions may be counterbalanced by increased employment, market stimulation, and tax revenues associated with increased economic activity on adjacent mainland areas or already developed coastal barriers. Also, the continued maintenance of aquatic habitats would help reduce development-related economic losses for the fish and shellfish industries, which depend on perpetuation of natural coastal barrier ecosystems for sustainable productivity. Since the 1987 landed value of fish and shellfish

exceeded $337 million in dockside dollar value in Louisiana alone, the economic impacts of this continued maintenance is substantial. Benefits related to trapping and sport fishing in the associated aquatic habitats behind coastal barriers may also be significant.

It is worth noting that a severe storm could easily obliterate the economic benefits associated with development and cause the coastal barrier to become a significant drain upon the community's economic resources for many years. The erosion associated with long-term sea-level rise will also place demands on the community's resources.

Conclusion: Under the Proposed Action, some curtailment of development activities will occur which may negatively impact the economic growth of local communities. Those communities in the Florida Keys, Puerto Rico, and the Virgin Islands have the greatest potential for negative impacts.

e. Impacts on public safety. To the extent that the Proposed Action results in reduced densities of development and thus lower population growth in the proposed additions, it will foster public safety by holding populations nearer to levels that may be safely evacuated before a severe storm. South Texas and the Florida east coast and Keys have the highest probability of a hurricane striking in any given year and the highest probability of a great hurricane in any given year (National Hurricane Center, hurricane probabilities chart). Both the Florida Keys and the coastal barriers in south Texas are located at some distance from safe evacuation sites.

In the Florida Keys, U.S. Highway 1, a single lane highway, is the only evacuation route. There is a significant probability that the causeway sections of U.S. Highway 1 will wash out during a storm (Siemon, Larson, and Purdy 1984, planning document for Monroe County). A washout would both prevent the evacuation of the Keys and greatly complicate the task of restoring services and providing food and medical assistance after the storm. Vertical evacuation, seeking refuge in the upper stories of tall buildings, has been suggested as an alternative to evacuation over U.S. Highway 1. However, there are many technical and policy problems associated with vertical evacuation that have not yet been answered, such as the degree of risk to people seeking refuge in these buildings, the liabilities to the owners of the buildings, and how potential shelter buildings should be evaluated (Jones and Spangler 1987).

On South Padre Island, Texas, the only evacuation route is the Queen Isabella Causeway, a four-lane divided highway. Any future development on the island must occur to the north, away from the causeway. This will exacerbate evacuation problems.

In Puerto Rico and the U.S. Virgin Islands, major hurricanes occur about once every 33 years. These islands are also exposed to occasional tsunamis, commonly referred to as "tidal waves," which result from seismic activity on the ocean floor. The north coast of

Puerto Rico is exposed to winter "northers" which produce high waves that can be more destructive than hurricanes.

Conclusion: To the extent that the Proposed Action limits development, it will foster public safety by limiting the numbers of people exposed to severe storms.

f. Impacts on the economics of Federal subsidies. There are approximately 39,000 acres of developable land in the proposed additions to the CBRS, as discussed previously. Using the same estimates of the costs of extending Federal assistance for development to these areas as developed by Miller (1981) and presented in the No Action Alternative, the potential savings to the Federal Government under the Proposed Action would amount to about $997 million over the period of development. In addition to the savings resulting from foregoing development assistance, savings resulting from foregoing post-development and post-disaster redevelopment assistance in these areas could amount to $2.08 billion.

Conclusion: Under the Proposed Action, significant savings to the Federal treasury will occur.

g. Impacts on cultural resources. By curtailing development, the Proposed Action could reduce the likelihood of damage or destruction of historic and archeological sites. Shell middens, which are locally common in the Southeast, and the remains of structures should incur the greatest reduction in probability of destruction.

Conclusion: The Proposed Action will have no adverse impact on cultural resources, and may reduce the potential for development-related damage or destruction.

CHAPTER V

CONSULTATION AND COORDINATION

This Supplemental Legislative Environmental Impact Statement on Proposed Changes to the Coastal Barrier Resources System was preceded by the Draft Environmental Impact Statement (May 1982) and Final Environmental Statement (May 1983). Public comments were accepted on the Draft Environmental Impact Statement and many consultation meetings were held by members of the Coastal Barriers Task Force with representatives of interested State and local governments, developers, members of Congress and their staffs, individual property owners, and scientists who specialize in the ecology and geology of coastal barrier systems. Chapter V, Consultation and Coordination, in the 1983 FES contains a complete summary of these proceedings.

The following listing of events indicates the consultation and coordination activities that have occurred since the release of the 1983 FES, all of which are pertinent to this supplement.

A. Listing of Events

1. The Coastal Barrier Resources Act Section 10 study began in 1983. In January, a meeting was held with interested Congressional staff and special interest groups to discuss the scope of the study. Four regional coordinators were then appointed by the National Park Service to work with the coastal states to acquire data. On October 19, 1983, the Governors of all the coastal states were sent a letter from the Secretary of the Interior notifying them of the study and asking them to name a State coordinator. On December 5, 1983, an outline of the proposed study and a request for comments on that outline were published in the Federal Register (48(234): 54543-54545). Comments from the public on the outline were accepted through February 1, 1984.

2. During 1984, the Coastal Barriers Study Group, a task force of professionals representing the U.S. Geological Survey, National Park Service, and the U.S. Fish and Wildlife Service, prepared a draft inventory of coastal barriers along all U.S. coastlines. All State coordinators were requested to review those draft maps and arrange meetings with Study Group members. Meetings were held in 21 of the 29 affected States to review the draft maps.

3. On March 4, 1985, the draft National inventory of maps was released for public comment, and copies were sent to all affected States and members of Congress. A briefing was held for interested Congressional staff.

In April 1985, the draft text report, Coastal Barrier Resources System Draft Report to Congress, was released for public comment. While it contained no recommendations, this report did outline the conservation alternatives that were available for the CBRS. Copies were sent to the Governors and appropriate staff offices of all the States in the study. The States were also notified that Study Group members were available for participation in State public meetings. Twenty-six meetings in ten States were attended. On September 30, 1985 the public comment period was closed. Over 2,300 comments were received on the draft inventory and report. A variety of opinions were expressed on the possibility of expanding the CBRS and the conservation alternatives. The comments received during the public meetings, written comments, and the information gathered in the study led to the conclusion that some expansion of the CBRS and the CBRA provisions was merited.

4. The Assistant Secretary for Fish and Wildlife and Parks then formulated proposed recommendations to Congress, and on March 25, 1987, a second draft report containing these proposed recommendations and a 22-volume compendium of the maps of all proposed changes in the CBRS (the Proposed Action in the draft LEIS) were released. Public comments on this second draft report were solicited through the Federal Register of March 25, 1987 (52(57): 9618-9619), and Congressional and press briefings were held. The draft report and map atlases were mailed to all affected members of Congress, State Governors, the Commonwealth of Puerto Rico, the Territory of the Virgin Islands, counties, and special interest groups. A notice of the availability of the report was mailed to all 2,300 commenters on the 1985 draft report.

5. During the comment period for the 1987 draft report, Departmental representatives attended 11 workshops or meetings at the invitation of 3 States to provide the public with more information on the draft report and proposed recommendations to Congress. More than 6,150 individuals commented on the draft report. Again, a wide variety of opinions on the DOI's proposed recommendations was expressed.

6. A draft version of this supplemental LEIS was prepared during the summer and fall of 1988 and released for public comment on February 1, 1988 (Federal Register 53(20): 2792). During the preparation of this draft supplement, consultation has occurred on numerous occasions with staff of the U.S. Fish and Wildlife Service, and with a senior scientist at the U.S. Geological Survey in Reston, Virginia. Additionally, information obtained from conversations with staff of the Puerto Rican Department of Natural Resources, documents from the Commonwealth of Puerto Rico, and on-site information gathered by a Yale University graduate student in Puerto Rico was used in making determinations about the coastal barriers of the Commonwealth.

7. Two internal scoping meetings were held for the draft supplemental LEIS, one on May 4, 1987, the other on May 27, 1987. Representatives of the Department of the Interior's Office of Environmental Project Review, the USFWS Office of Fish and Wildlife Enhancement, the NPS Environmental Compliance Division, and the NPS Science Support Staff attended

both meetings. A meeting to review the first rough draft of the document was held July 14, 1987, with the same persons attending along with the Special Assistant to the Assistant Secretary for Fish and Wildlife and Parks.

8. On March 17, 1988, the comment period on the draft supplemental LEIS was closed. Twenty-three comment letters specifically related to the draft LEIS were received. About 50 additional comments related to the 1987 draft CBRS Report to Congress were also received.

9. After reviewing all the public comments on both the 1987 draft report and the draft LEIS, the Department of the Interior formulated final recommendations to Congress. This final supplemental LEIS has been revised so that the Proposed Action is consistent with those final recommendations. It has also been revised to address the concerns raised by the commenters on the draft LEIS.

10. The twenty-three comment letters received on the draft LEIS and the DOI's responses to those letters are reprinted in the following section. All the comment letters received on the CBRA Section 10 study and the draft LEIS are available for public review in the Washington office of the Fish and Wildlife Service.

B. Distribution of the Draft Supplemental LEIS

This draft supplemental LEIS was distributed to the following organizations and individuals.

FEDERAL AGENCIES

Department of Defense
Department of Commerce
Department of Transportation
Department of Agriculture
Department of Energy
Department of the Treasury
Department of Housing and Urban Development
Environmental Protection Agency
Federal Emergency Management Agency
General Services Administration
Veterans Administration
Federal Home Loan Administration
Small Business Administration

GOVERNORS OF ALL STATES BORDERING ATLANTIC OCEAN AND GULF OF MEXICO

Maine
Massachusetts
Rhode Island
Connecticut
New York
New Jersey
Delaware
Maryland
Virginia
North Carolina
South Carolina
Georgia
Florida
Alabama
Mississippi
Louisiana
Texas

GOVERNORS OF PUERTO RICO AND U.S. VIRGIN ISLANDS

STATE, COUNTY, AND LOCAL GOVERNMENTS OF STATES, COUNTIES, AND COMMUNITIES BORDERING ATLANTIC OCEAN OR GULF OF MEXICO

SEA GRANT COLLEGES IN STATES BORDERING ATLANTIC OCEAN AND GULF OF MEXICO

CONSERVATION AND ENVIRONMENTAL ORGANIZATIONS

OTHER ORGANIZATIONS (INCLUDING UNIVERSITIES) AND INDIVIDUALS WITH INTEREST IN COASTAL BARRIERS

Members of the U.S. SENATE and HOUSE OF REPRESENTATIVES in the affected areas.

CHAPTER VI

REFERENCES

Ball, M.M., E.A. Shinn, and K.W. Stockman. 1967. The geological effects of Hurricane Donna in south Florida. J. Geol. 75(5): 583-597.

Beccasio, A.D., N. Fotheringham, A.E. Redfield, R.L. Frew, W.M. Levitan, J.E. Smith, J.O. Woodrow, Jr. 1982. Gulf Coast ecological inventory, users guide and information base. U.S. Fish Wildl. Serv. Biol. Serv. Program FWS/OBS-82/55. 191 pp.

Enos, P. 1977. Quaternary sedimentation in south Florida. Part 1. Holocene sediment accumulation of the south Florida shelf margin. Geol. Soc. Am. Mem. 147: 1-130.

Hammer, Siler, and George Associates. 1984. Growth management plan: economic trends and projections-Florida Keys area of critical state concern. Prepared for Monroe County, Fla. 72 pp.

Hicks, S.D., H.A. Debaugh, and L.E. Hickman. 1983. Sea-level variations for the United States, 1855-1980. National Ocean Service, Rockville, MD.

Island Resources Foundation. 1985. Puerto Rico and the Virgin Islands coastal barriers summary report. Prepared for the U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 75 pp.

Jindrich, V. 1969. Recent sedimentation by tidal currents in the lower Florida Keys. J. Sediment. Petrol. 39(2): 531-553.

Jones, C.P., and B. Spangler. 1987. Structural evaluation of hurricane shelters. Pages 211-220 in R.H. Platt, S.G. Pelczarski, and B.K.R. Burbank, eds. Cities on the beach: management issues of developed coastal barriers. Department of Geology Research Paper No. 224, University of Chicago.

Krawlec, W. 1977. Solution pits and solution breccias of the Florida Keys. Pages 282-285 in H.G. Multer, ed. Field guide to some carbonate rock environments: Florida Keys and western Bahamas. Kendall/Hunt Publishing Company, Dubuque, Iowa.

McCloy, J.M., and S.N. Huffman. 1987. Hurricane Alicia and the Galveston experience. Pages 221-228 in R.H. Platt, S.G. Pelczarski, and B.K.R. Burbank, eds. Cities on the beach: management issues of developed coastal

barriers. Department of Geology Research Paper No. 224, University of Chicago.

Miller, H.C. 1981. The barrier islands: a gamble with time and nature. Environment 23(9):6-11, 36-42.

Norton, R.L. 1983. Birds of St. Johns, U.S. Virgin Islands: a national park checklist. Virgin Islands National Park.

Nummedal, D. 1983. Barrier islands. Pages 77-121 in P.D. Komer, ed. CRC handbook of coastal processes and erosion. CRC Press, Inc. Boca Raton, Fla.

Odum, W.E., C.C. McIvor, and T.J. Smith. 1982. The ecology of the mangroves of south Florida: a community profile. U.S. Fish Wildl. Serv. Biol. Serv. Program FWS/OBS-81/24. 144 pp.

Philobosian, R., and J.A. Yntema. 1977. Annotated check list of the birds, mammals, reptiles and amphibians of the Virgin Islands and Puerto Rico. Information Service. 48 pp.

Pilkey, O.H., Jr., D. C. Sharma, and H.R. Wanless. 1984. Living with the East Florida shore. Duke University Press, Durham, N.C. 259 pp.

Puerto Rico Department of Natural Resources. 1984. Puerto Rico, a coastal atlas: sensitivity of coastal environments and wildlife to spilled oil. 40 pp.

Schomer, N.S., and E.D. Drew. 1982. An ecological characterization of the lower Everglades, Florida Bay and the Florida Keys. U.S. Fish Wildl. Serv. Biol. Serv. Program FWS/OBS-82/51.1. 246 pp.

Shepard, F.P., and H.R. Wanless. 1971. Our changing coastlines. McGraw-Hill Book Company, New York. 579 pp.

Siemon, Larson, and Purdy. 1984. Monroe County: discussion of growth management issues. Prepared for Monroe County, Fla. 125 pp.

Simpson, R.H., and M.B. Lawrence. 1971. Atlantic hurricane frequencies along the U.S. coastline. NOAA Tech. Memo NWS SR-58. Fort Worth, Tex.

U.S. Department of the Interior in conjunction with Office of Coastal Zone Management and Council on Environmental Quality (DES 80-1). 1980. Alternative policies for protecting barrier islands along the Atlantic and Gulf Coasts of the United States and Draft Environmental Statement. U.S. Department of the Interior, Washington, D.C. 142 pp. Appendices.

U.S. Department of the Interior. 1982. Undeveloped coastal barriers: report to Congress. U.S. Department of the Interior, Washington, D.C. 39 pp.

U.S. Department of the Interior, Coastal Barriers Study Group. 1985. Coastal Barrier Resources System draft report to Congress. U.S. Department of the Interior, Washington, D.C.

U.S. Department of the Interior, Coastal Barriers Study Group. 1987. Draft report to Congress: Coastal Barrier Resources System (executive summary). U.S. Department of the Interior, Washington, D.C.

U.S. Department of the Interior, Coastal Barriers Study Group. 1987. Draft report to Congress: Coastal Barrier Resources System. Proposed recommendations for additions to or deletions from the Coastal Barriers Resources System (Volumes 1 through 22). U.S. Department of the Interior, Washington, D.C.

U.S. Department of the Interior, Coastal Barriers Task Force. 1982. Draft environmental impact statement: undeveloped coastal barriers and Federal flood insurance. U.S. Department of the Interior, Washington, D.C. 83 pp.

U.S. Department of the Interior, Coastal Barriers Task Force. 1982. Draft undeveloped coastal barriers: draft definitions and delineation criteria. U.S. Department of the Interior, Washington, D.C. 25 pp.

U.S. Department of the Interior, Coastal Barriers Task Force. 1983. Final environmental statement: undeveloped coastal barriers. U.S. Department of the Interior, Washington, D.C.

CHAPTER VII

LIST OF PREPARERS

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1779

EPA

MAR 21 1988

Ms. Audrey Dixon
Coastal Barriers Study Group
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P. O. Box 37127
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Dear Ms. Dixon:

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act, the Environmental Protection Agency (EPA) has reviewed the draft Legislative Environmental Impact Statement (LEIS) on proposed changes to the Coastal Barrier Resources System (CBRS). The LEIS was prepared by the Coastal Barriers Study Group to assist the Secretary of the Interior in making final recommendations to the Congress on proposed changes to the CBRS. On July 2, 1987, EPA submitted comments on the Draft LEIS to Congress. The issues we identified in our comments on the Draft LEIS are reflected in this letter and others.

1779-1

1779-2

1779 1 Support for CBRS expansion noted

1779 2 Opinions noted Volume 1 of the CBRS Report to Congress contains a lengthy discussion of regulatory options for the CBRS (Chapter 8) The DOI believes that requiring regulatory consistency at the federal level would depart from the basic CBRA premise that conservation can be achieved without increasing federal regulatory involvement by simply withdrawing federal financial support for development of undeveloped coastal barriers Therefore, DOI recommends no regulatory amendments

RESPONSE TO 1779 ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF FEDERAL ACTIVITIES

While review of the DEIS reveals that this position is not presented as part of the current proposal, EPA continues to believe that the Secretary of the Interior should recommend to Congress that Federal permitting processes within and adjacent to the CBRS require Federal consistency with CBRA. Further, EPA believes that requiring existing Federal permits to be administered consistent with CBRA will not result in an increase in Federal involvement or the creation of a new Federal regulatory program. A requirement for Federal regulatory consistency would only require that the Federal government's permit programs not work at cross-purposes to Federal law protecting coastal barriers.

Delineation of Landward Boundaries

1779-3 As summarized and contained in the DEIS for additions of aquatic environments to the CBRS are based upon various delineation formulas which determine the landward boundary of these habitats. As projected in the DEIS, the boundary is generally drawn to follow natural or cultural features that would be recognizable on available maps or aerial photographs as well as on the ground under the proposed delineation method. The boundary would run landward to the first clearly identifiable feature landward of the mean high water line on the oceanside of the coastal barrier [illegible] and less for undeveloped barriers.

While we recognize the ability of existing identifiable boundaries, [illegible] we do not support the proposed delineation [illegible] of the definition of associated aquatic habitat [illegible] the entire area subject to diminished wind, wave, and tidal energies during a major storm" as the basis for the DEIS [illegible] habitat boundaries. In addition, [illegible] the natural [illegible] habitat [illegible] in the proposed delineation proposal, and the area that would be included if the delineation formula were based on criteria such as the transition from wetland vegetation to upland vegetation.

Treatment of Developed Coastal Barriers

1779-4 The DEIS proposes that a "otherwise protected" status in the exist[illegible] would result in [illegible] that [illegible] Federal [illegible] alternatives [illegible] Federal [illegible] would be constrained by the requirements of the Interior guidelines for acceptable development.

EPA recognizes the need [illegible] Federal certificates or support [illegible] the protection of [illegible] natural resources [illegible] Federal [illegible] Federal expenditure [illegible] EPA also believes that [illegible] Federal expenditure [illegible] the latter which pertain to [illegible] navigation, public recreation, scientific

VIII-2

CONTINUED RESPONSE TO 1779 ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF FEDERAL ACTIVITIES

1779-3 The definition of associated aquatic habitat as "the entire area subject to diminished wind, wave, and tidal energies during a major storm" is a functional one. To make the CBRS maps, the DOI also needed delineation guidelines which would translate that functional definition into cartographic characteristics. Three major criteria were developed and used:

1) In the general case, the landward boundary of the associated aquatic habitat was drawn at the interface between the aquatic habitat and the upland on the mainland. This is visible on topographic maps and aerial photographs as a change in vegetation.

2) Where an open water body exists landward of the barrier, the boundary was drawn through the open water about 1 mile landward of the backside of the barrier.

3) Where continuous wetlands extend more than 5 miles landward of the barrier, the boundary was drawn through the wetland along an identifiable channel or political boundary nearest to the 5 mile limit. If such a feature was absent, the boundary was drawn through the wetland generally parallel to and 5 miles landward of the mean high water line on the ocean side of the barrier.

A brief discussion of these criteria has been added to the FEIS. A full discussion (including figures) appears in Volume 1 of the Report to Congress (Chapter 5).

1779-4 In its 1985 national inventory of coastal barriers, the DOI did identify 436 otherwise protected areas. The existing CBRS, however, only includes a small number of otherwise protected areas that have been acquired by governments or conservation organizations since 1982 or that the DOI did not realize were otherwise protected in 1982.

The Congress specifically excluded otherwise protected barriers from the CBRS in 1982 (see Section 3(1)(B) of the CBRA). The DOI's continued exclusion of these areas is, thus, fully consistent with the Act. The DOI is recommending that otherwise protected coastal barriers be automatically included in the CBRS if they are ever made available for development that is inconsistent with the CBRA purposes and the long-term conservation of the barrier. An amendment to the CBRA providing a legislative directive to DOI to develop guidelines for acceptable development is necessary. Lack of adherence to the guidelines would constitute justification for automatic inclusion in the CBRS. Volume 1 of the CBRS Report to Congress contains a complete discussion of this recommendation. An abbreviated discussion has been added to the FEIS.

research, air and water navigation, national security, energy development, maintenance of existing public facilities and structures..." (p. I-3). Given these exemptions, it would be useful if the FLEIS could discuss further the proposed deletions in light of the CBRA exemptions and provide a summary of federally supported activities which would be allowed under the proposed alternative but which are not presently allowed under the exemptions provided in CBRA.

1779-5

EPA has rated the action proposed in the DLEIS "EC-2" (environmental concerns-insufficient information). (A sheet describing EPA's rating system is enclosed for your information). As described above, EPA's environmental concerns are based upon the potential environmental impacts resulting from a lack of federal regulatory consistency with CBRA as well as proposed boundary delineations for associated aquatic habitat that, as presented in the DLEIS, appear inconsistent with the intent and purpose of CBRA. We are also concerned about clarification of the justification for proposed deletions from the System which appear unnecessary.

Thank you for the opportunity to review the draft EIS. If you have any questions regarding our comments, please feel free to call me (215-597-9...). If your staff wishes to meet with Barney Gibbs or one of my staff

Sincerely,

Richard E. Sanderson
Director
Office of Federal Activities

VIII-3

CONTINUED RESPONSE TO 1779 ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF FEDERAL ACTIVITIES

1779-5 Further information and explanation in each of the areas identified by EPA have been added to the FEIS.

SUMMARY OF RATING DEFINITIONS
AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO--Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO--Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1--Adequate
EPA believes the draft EIS adequately sets forth the environmental impacts of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information
The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives discussed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*If a proposal is assigned a Category 3, this fact and the EPA recommendation will be published in the Federal Register.

DEPARTMENT OF THE ARMY

VIII-S

1757-1

1757-2

1757-3

1757-4

RESPONSE TO 1757 DEPARTMENT OF THE ARMY, NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

1757-1 The DOI has reexamined the proposed additions to S03 and S07 and determined that the recommended boundary of neither unit is more than about 5 miles inland. The 5-mi boundary limitation is part of DOI's delineation criteria, it is not legally mandated.

1757-2 The boudin bags and rip-rap on Timbalier Island do not constitute development according to DOI criteria. Rutherford Beach is not included in CBRS unit S10. The developed portions of Johnstons Bayou are not included in S11. The developed areas near Mud Lake (Holly Beach) are not included in LA-10.

1757-3 The EIS did not specifically address impacts to local areas because it was not possible to do so for all 19 affected States and territories. The CBRA states that the CBRS includes coastal barriers and their associated aquatic habitats, therefore, DOI is recommending the addition of qualified wetlands throughout the system.

1757-4 Development pressures are greatest in the Sun Belt States as a region, but pressures will vary within that region. In Louisiana, most of the proposed additions are wetlands and development pressures to the wetlands are lower than in the fastland portions of barriers.

Specific Comments

1757-5 Page 2b(1) - The small clusters of houses on the cheniers cannot be substantially classified as "urban areas".

1757-6 Page 2b(2) - You state that, except for the cheniers, approximately 5% of the proposed additions are near established communities. This is not so for most of the 9,6[illegible] acres proposed for addition in Louisiana.

Sincerely,

[signature]

CONTINUED RESPONSE TO 1757 DEPARTMENT OF THE ARMY, NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

1757-5 The language in the LEIS has been corrected

1757-6 The statement in the LEIS has been changed to state that outside Louisiana (not just the cheniers), 80% of the proposed additions are near established communities

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC 20332-5000

10 MAR 1988

Mr. Audrey L. Dixon
Coastal Barrier Study Group
National Park Service
P.O. Box 37127
Washington DC 20013-7127

Dear Mr. Dixon

We have reviewed the draft supplemental legislative environmental impact statement and proposed changes to the Coastal Barrier Resources System Act and have no objection. Thank you for the opportunity to provide input.

Sincerely

[illegible]
Chief, Real Estate Division
Directorate of Engineering & Services

1716-1

RESPONSE TO 1716 DEPARTMENT OF THE AIR FORCE

1716-1 Information noted - no response needed

1775

Office of Facilities Washington DC 20420

Veterans Administration

MAR 2 3 1979

1775-1

VIII-8

RESPONSE TO 1775 VETERANS ADMINISTRATION, ENVIRONMENTAL AFFAIRS

1775-1 Information noted - no response needed

State of New York
Department of
Environmental Conservation
[illegible]

MAR [illegible] 1988

Dear Mr. Dunn:

The New York State Department of Environmental Conservation is pleased to offer the following comments on the Draft Supplemental Environmental Impact Statement (SEIS) and Plan to the Flood Control Section 205 Project, Buffalo Creek, Erie County, New York. The SEIS provides the Corps of Engineers and the State Department of Environmental Conservation with the opportunity to review and comment on the Corps' proposed project and its potential impacts on the environment. We have reviewed the SEIS and have the following comments to offer:

1760-1

[illegible]

Sincerely,

[illegible]

[illegible]
[illegible]
[illegible]

6-111A

RESPONSE TO 1760 STATE OF NEW YORK, DEPARTMENT OF ENVIRONMENTAL CONSERVATION

1760-1 Support for Alternative A, the Proposed Action noted

COMMONWEALTH of VIRGINIA

Council on the Environment

April 11, 1988

Ms. Audrey L. Beach
Alaska Boundary Study Group
National Park Service
P.O. Box 37127
Washington, D.C. 20013

Dear Ms. Beach:

This is in reply to the proposed [illegible] Alaska Boundary Study Group. [illegible] Council on the Environment is responsible for coordinating [illegible] Executive Branch agencies and [illegible] Commonwealth.

1774-1 We appreciate your sending a copy of the draft [illegible] last year on the draft report to Congress. Copies of those comments are attached. If you have any questions, please feel free to contact this office.

Sincerely,

Ronald Maitland

Commonwealth Environmental Planner

RESPONSE TO 1774 COMMONWEALTH OF VIRGINIA COUNCIL ON THE ENVIRONMENT

1774-1 Information noted - no response needed

FR208 02/29/88

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
116 WEST JONES STREET
RALEIGH NORTH CAROLINA 27611

INTERGOVERNMENTAL REVIEW COMMENTS

MAILED TO

U.S. DEPT. OF THE INTERIOR
ATTN: REVIEW
P.O. BOX 37127
WASHINGTON, D.C. 20013-7127

FROM

MRS. CHRYS BAGGETT
DIRECTOR
N C STATE CLEARINGHOUSE

PROJECT DESCRIPTION:

COASTAL BARRIER RESOURCES SYSTEM PROPOSED CHANGES TO THE COASTAL BARRIER RESOURCE SYSTEM

SAI NO FED880208-0 PROGRAM TITLE - DRAFT SUPP. LEGIS. EIS

1722-1 THE ABOVE PROJECT HAS BEEN SUBMITTED TO THE NORTH CAROLINA INTERGOVERNMENTAL REVIEW PROCESS. AS A RESULT OF THE REVIEW THE FOLLOWING IS SUBMITTED: [ ] NO COMMENTS WERE RECEIVED

[ ] COMMENTS ATTACHED

SHOULD YOU HAVE ANY QUESTIONS, PLEASE CALL THIS OFFICE (919) 733-0499.

RESPONSE TO 1722 NORTH CAROLINA STATE CLEARINGHOUSE

1722-1 Information noted - no response needed.

COVINGTON & BURLING

(202) 662 5640

March 18, 1988

VIII-12

1736-1

RESPONSE TO 1736 COVINGTON & BURLING FOR THE COMMONWEALTH OF PUERTO RICO

1736-1 Opposition to adding Puerto Rican barriers to the CBRS noted. Coastal barrier features, whether fronting a coastal plain or a steeper topography, share common characteristics that are outlined in OCS's defining criteria. The coastal barriers identified in Puerto Rico fully meet these criteria.

1736-2

The Commonwealth also described the detailed and comprehensive land use regulations that it has promulgated to protect coastal areas. These land use regulations, which prohibit or tightly restrict harmful development, are far more effective than the CBRS regulations in protecting vulnerable coastal formations. The Commonwealth noted that its governmental system, which is based partly on a Spanish model, is more centralized than those of other American jurisdictions. As a consequence, decisions on land use are made on the basis of the interests of all the people of Puerto Rico, rather than only those of a small coastal community. Finally, the Commonwealth reviewed in detail the characteristics of the individual areas proposed for inclusion in the CBRS.

1736-3

The EIS does not attempt to quantify the environmental benefits adding new areas to the CBRS would yield. It asserts that there will be some reduction in development, and that this will in turn provide some environmental benefits. However, because the methods used in the EIS to estimate flows of sediment are, in part respects, at least as applied to Puerto Rico, the EIS cannot be used as the basis for adding new areas on Puerto Rico to the CBRS.

1736-4

The EIS appears to assume that only federal regulation is effective and that local regulation will not be sufficient to preserve the undeveloped character of the coastal barriers. This assumption is inconsistent with the principles of Federalism. While federal, even if small communities in the U.S. can be dominated by developers, this is not true of Puerto Rico, where land use planning is administered on an island-wide basis.

1736-5

A related flaw in the EIS is its inadequate treatment of the reasons why the undeveloped coastal areas proposed for inclusion in the CBRS have remained undeveloped. The EIS treats undeveloped coastal areas as if the mere existence of federal flood insurance would cause them to be developed. This is not the case. Many undeveloped coastal areas are undeveloped because they are subject to local land use regulations that limit development. Other areas are undeveloped because they are owned by the federal government.

1736-6

A further deficiency of the EIS is its assumption that all of the CBRS is a uniform system of undeveloped coastal barriers. The EIS fails to recognize that there are significant differences between the various areas proposed for addition to the CBRS. The EIS notes that

CONTINUED RESPONSE TO 1736 COVINGTON & BURLING FOR THE COMMONWEALTH OF PUERTO RICO

1736-2 The Commonwealth's comments were noted, however, the CBRA is not a land-use law. It does not affect the rights of the Commonwealth or individuals to do what they wish with their land.

1736-3 It is not possible to quantify the environmental benefits exactly because the reduction in development that the CBRA will produce will vary across the 19 affected States and Territories according to many local factors.

The EIS made the best general predictions possible.

1736-4 Opinions noted. The OEI has revised the EIS to ensure that it does not imply that State and local governments do not participate in the management of coastal resources.

1736-5 Section 10 of the CBRA directed the OEI to identify undeveloped unprotected coastal barriers. The OEI was not directed to examine why particular areas are undeveloped. The CBRA does not interfere with local land-use regulation. It only restricts the use of federal monies in the designated CBRS.

1736-6 The CBRA is not an attempt to provide blanket protection for sensitive habitats. It only seeks to withdraw those federal subsidies which encourage development in coastal barriers and their associated aquatic habitats.

mangrove swamps and coral reefs are not ordinarily considered attractive sites for development but asserts that certain activities, such as dredging, may take place and damage the swamps and reefs.

While the LEIS is correct that dredging activities can damage mangrove swamps and coral reefs, it does not explain how adding these areas to the CBRS would avoid this harm. Dredging would likely be undertaken in a mangrove swamp or coral reef to support development in a nearby area. Adding the swamp or reef to the CBRS would do nothing to prevent this. The only effective means of avoiding this damage is to directly limit activities that may damage the swamps or reefs. As explained in its comments on the Draft Report, the Commonwealth has implemented a comprehensive system to regulate land use that provides this protection.

Similar considerations apply to other activities that may affect coral reefs. Although, as the LEIS notes, reefs are fragile and environmentally beneficial structures, the CBRS is not an effective means of protecting them. Development upstream that generates silt can poison a reef, while development near the coast that is carefully controlled may do no harm. The CBRS does nothing about the former, while prohibiting the latter. For these reasons, the LEIS overstates the environmental benefit from adding these areas to the CBRS.

1736-7

The LEIS also fails to adequately account for the costs of adding new areas to the CBRS. Once an area is added to the CBRS, with certain limited exceptions, all federal assistance is precluded for development in those areas. There is no attempt to evaluate whether an individual project may be of insubstantial benefit or even environmentally beneficial. [illegible] As pointed out in the Commonwealth's comments on the Draft Report, projects such as sewer lines running between populated areas through a CBRS area would be denied federal assistance even though they would benefit the environment. The costs of this denial to the public from the failure to construct such projects is not offset by any environmental benefit. Only a regulatory scheme, such as that instituted by the Commonwealth, that is sensitive to the effects of individual projects, can provide a cost-effective means of protecting the environment.

Conclusion

For all of the foregoing reasons, and those set forth in the Commonwealth's comments on the Draft Report, the

1736-7 The DOI is recommending an amendment to Section 6 of the CBRA to allow utilities to use Federal monies for the purposes of (1) putting in "essential lines" through the CBRS where no practicable alternative exists to service one or more developed areas on coastal barriers outside the CBRS, and (2) providing service to developments within the CBRS from existing lines or "essential lines" which cross through the CBRS provided that service can be supplied with no additional costs to the Federal Government. If any upgrades are necessary to accommodate such service within the CBRS, the DOI recommends that their costs be borne by non-Federal parties.

If the Commonwealth decides that other projects in the CBRS would provide significant environmental benefits, it would be free to finance them itself.

Commonwealth urges the Department of the Interior to reconsider its decision to recommend to Congress that areas in Puerto Rico be added to the CBRS.

Respectfully submitted,

[redacted]
Richard D. Copaken
Alan Tanenbaum
[redacted]

[redacted]

County of Volusia
Florida

1718-1

VIII-16

RESPONSE TO 1718 COUNTY OF VOLUSIA, FLORIDA

1718-1 Support for the Proposed Action noted.

OCEAN ISLE BEACH

February 16, 1988

U. S. Department of the Interior
Office of the Secretary
William P. Horn
Washington, D. C. 20240

Re: [illegible]

Dear Mr. Horn:

[illegible]

1785-1

[illegible]

1785-2

[illegible]

1785-1 [illegible] We will add mention the recovery of the brown pelican. The 1987 FEIS contains a full discussion of endangered species [illegible]

1785-2 In enacting the CBRA, the Congress determined that development on coastal barriers was risky and should not be supported by the federal government

Page 2

(4) The storm hazard statistic is legitimate to some degree. Tornados, forest fires, earthquakes, bitter cold, chemical spills. Hazards occur every day anywhere in the United States and federal monies are used in each of these disasters.

1785-3

(5) Most access to barrier islands exist because of developing communities on the coast. Past experience has shown that making the areas part of any Federal Lands Program results in restricted public access. The coast of North Carolina is a case history that may be used as an example of excluding the public. A large portion of the general population are not hard, back woodsman capable of roughing it or a wilderness skare. To save hundreds of thousands of acres of this land for the use of a small but adamately vocal few who are able to cope with such hardships is a disservice to the majority of the population who wish to visit the coastal shore.

1785-4

(6) A point of section IV flood-plain management ordinances are not true. I work in the floodplain development office in the city of [illegible] which is a part [illegible] of the National Flood Insurance Program and must adhere to the strict.

1785-5

(7) In the last para the statement [illegible] a statement on property values. No justification to make a statement [illegible] attitude [illegible] and statistics are [illegible] that appear to support expansion of the program.

In effect this draft statement appears to have been written by the Federal Government for the Federal Government. Persons in United States outside [illegible] to the State concerned. This paper supports and is not only [illegible] of the Constitution of the United States. Also the actual benefit to federal money funds to be estimated for each program participant in the coastal hazards area. If the criteria of the draft statement cannot [illegible] with estimated savings for each program then the participation of these programs should not be listed as a benefit.

Thank you for this opportunity to express my views.

Sincerely,

T. D. Roberson
T. D. Roberson
Building Inspector

TDR:pc

CONTINUED RESPONSE TO 1785 T.D. ROBERSON, OCEAN ISLE BEACH, NC

1785-3 Opinions noted. The CBRA does not involve federal acquisition of coastal barrier property.

1785-4 Although FEMA requires an approved floodplain management program in a local community before it will make federal flood insurance available in that community, floodplain management can and does also exist in the absence of access to federal flood insurance.

1785-5 A more detailed analysis of impacts on local property values would require independent economic analyses in each of the more than 100 areas affected by DOI's recommendations. This clearly was not feasible.

The EIS estimates a potential federal savings of $997 million to $2.08 billion in the proposed addition areas (see Chapter IV).

NATIONAL ASSOCIATION OF REALTORS®

Dexter R. Hoagland Jr. President
Robert D. Nunn Executive Vice President
Stephen D. Dreyer Senior Vice President, Government Affairs
C. Thum Vice President & Legislative Counsel Government Relations

777 14th Street N.W. Washington, D.C. 20005-3271
Telephone 202 383 1074

March 10, 1988

Mr. Jack Brown
Coastal Barrier Resources Unit
Wildlife and Vegetation Division (498)
National Park Service
P.O. Box 37127
Washington, D.C. 20013-7127

Dear Mr. Brown:

The NATIONAL ASSOCIATION OF REALTORS® is taking this opportunity to comment on the Department of the Interior January 1988 Draft Supplemental Legislative Environmental Impact Statement on Proposed Changes to the Coastal Barrier Resources System (CBRS). In this document, the Department examines the environmental and socio-economic impacts of two different approaches: 1) expanding the existing Coastal Barrier Resources System by approximately one million acres (the "preferred option" and 2) maintaining the current 453,000 acres in the Coastal Barrier Resources System (the "no action alternative"). NAR also provided comments in June 1987 on DOI's draft report to Congress on the CBRS.

Our comments are as follows:

1712-1

- The Department's characterization of the impact on wetlands of the no-action alternative does not fully examine all available studies and reports. The 1984 Office of Technology Assessment study entitled "Wetlands: Their Use and Regulation" concludes that coastal wetlands are reasonably protected from degradation because most wetland activities are regulated by the Corps of Engineers and state wetlands programs. We urge the DOI to reassess their projected impact of a no-action alternative on coastal wetlands.

1712-2

- We understand these areas to exist in the Legislative Environmental Impact Statement (LEIS) that state and local regulations applicable to land use management in coastal areas is neither effective nor practically applied. However, state and local laws, regulations, and ordinances were not adequately examined in the Draft LEIS. The LEIS would be enhanced by the inclusion of an evaluation of the failures and successes of state and local land use management programs and an examination of the improvements that would result from the proposed action. For instance, given the status of current state and local regulation in the Florida Keys, can DOI demonstrate what additional benefits would be expected by bringing this area in under the CBRS umbrella?

1712-3

RESPONSE TO 1712 NATIONAL ASSOCIATION OF REALTORS

1712-1 Although the Section 10 and Section 404 regulatory programs and State wetland programs have slowed development in wetlands, they have not stopped it. Development on upland areas adjacent to wetlands also contributes to the degradation of wetlands through runoff, pollution, and siltation, and upland development is not affected by these programs.

The OTA Report also states that there are fundamental differences in the way Federal agencies and various special interest groups interpret the intent of Section 404. OTA states "The Corps views its primary function in carrying out the law as protecting the quality of water. Although wetland values are considered in project reviews, the Corps does not feel that Section 404 was designed specifically to protect wetlands."

1712-2 State and local regulations, laws, and ordinances are discussed at length in each of the CBRS Report to Congress State atlases (Volumes 2-22). The CBRA does not compete with local programs; in most cases, it complements them. Detailed analyses of the local impacts of the recommendations in all 19 affected States and Territories were not feasible.

1712-3 Additional economic benefits to the Federal taxpayer would be expected if subsidies are not available in the Keys Barriers.

1712-4

3. The draft LEIS would be improved by including conclusive evidence relating to the overall economic impacts of the recommendations. The Secretary should re-examine and re-evaluate the economic impact of both the proposed action and the no action options, possibly employing methodologies similar to those used in the 1985 Corpus Christi Barrier Island Task Force Report to estimate future socio-economic impacts of the Coastal Barrier Resources System. A copy of the Task Force Report is attached.

1712-5

4. The draft LEIS could be strengthened by adequately examining the financial and human risks resulting from the proposed action due to the unavailability of federal flood insurance. Under the National Flood Insurance Program (NFIP), participating areas and individuals must utilize floodplain areas in a prudent manner and can incorporate floodproofing techniques into site planning and building renovation. Adherence to the NFIP regulations provides a substantial measure of protection for property and life. A key finding set in the purposes of the Coastal Barrier Resources Act of 1982 (CBRA) disallowing the use of federal [illegible] for the [illegible] Consequently, and thus behind the election [illegible] Measures may be taken [illegible] Barrier Islands and [illegible] a great deal of [illegible] The draft LEIS [illegible] attempt to quantify these risks and their associated costs.

1712-6

5. The [illegible] evaluate the budgetary impact to the federal [illegible] the [illegible] action options. Again, one of the basic reasons behind the initial passage of the CBRA was the "windfall" to the federal treasury. Yet the only attempt in the LEIS to quantify the federal deficit impact is the reference to an article from a 1981 copy of Environment Planning. We believe that the LEIS would be greatly improved by the inclusion of a definitive analysis of the federal budgetary impacts of the proposed action and the no action options.

We appreciate this opportunity to comment on the Department's LEIS and look forward to working with the Department of Interior as it prepares its [illegible] recommendations to Congress.

Sincerely,

Gil Thurz, Vice President
and Legislative Counsel

VIII-30

CONTINUED RESPONSE TO 1712 NATIONAL ASSOCIATION OF REALTORS

1712-4 The LEIS uses the best available estimates of federal assistance on coastal barriers to evaluate the economic impacts of the DOI's recommendations. Because the DOI's recommendations cover hundreds of barriers along the Atlantic and Gulf of Mexico coasts, nationwide statistics are necessary. The famous Corpus Christi Barrier Island Task force report estimates apply only to south Texas; they cannot be extrapolated nationwide.

1712-5 Private individuals have the right to take whatever risks they desire. It is not possible to quantify the risks individuals may be willing to take.

1712-6 The DOI used the best available estimates of the federal subsidies used to support development on coastal barriers.

NRDC

Natural Resources
Defense Council

March 12, 1988

Coastal Barrier Study Group
National Park Service
Department of the Interior
P.O. Box 37127
Washington, D.C. 20013-7127

Re: Comments on Draft Supplemental Legislative Environmental Impact Statement on Proposed Changes to the Coastal Barrier Resources System, 53 Federal Register 270.

Dear Sir or Madam:

VIII-21

17-111A

statements, including those prepared pursuant to proposed legislation. §1506.8.[1]

Perhaps the most significant defect in the LEIS is its failure to deal with a reasonable range of alternatives to the proposed action. The Final LEIS must correct this flaw. The alternatives the Agency must consider in the Final LEIS are outlined below.

1737-1

1. Geographic Scope.

The LEIS examines two alternatives with respect to the geographic scope of the proposal. The first alternative proposes expanding the Coastal Barrier Resource System (CBRS, by §10 on the Atlantic and Gulf coasts and recommends the inclusion for the first time of undeveloped coastal barriers on the Florida Keys, Puerto Rico and the U.S. Virgin Islands. The other proposal evaluated in the LEIS is a "no action" alternative, under which the CBRS would remain unchanged. These two alternatives together clearly do not represent "all reasonable alternatives" as required by the CEQ regulations (§1502.14 a [illegible] of the widespread support for inclusion of the Great Lakes, Pacific and Great Lake coast estuaries, the DOI must examine this option as an alternative in the discussion of geographic scope in the final LEIS.

Letters by citizens, state government officials, scientific experts and others all support inclusion of most coast and Great Lakes barriers in the CBRS. For example, Senator Glenn Alexander has introduced a bill (S.1955, which directs the Department to re-map and recommend for inclusion eligible Great Lakes undeveloped areas, gives Congress 90 days to review these recommendations, and then includes these units directly into the system. Representative Davis also has introduced a bill (H.R.2810) requiring the Department to re-inventory qualified Great Lakes

---

1. The CEQ regulations require that draft and final environmental impact statements on a legislative proposal be prepared and circulated as provided by §§1503.1 and 1506.10 when the proposal results from a study process required by statute (§1506.8(b)(1)(i)), and when legislative approval is sought for projects which the Agency recommends be located at specific geographic locations (§1506.8(b)(1)(iii)). Since the LEIS prepared by the Department has been prepared pursuant to a study process required by the Coastal Barrier Resources Act, and since it recommends actions located at specific geographic locations, draft and final EIS's on the legislative proposal must be prepared and circulated as provided by §§1503.1 and 1506.10.

1737-1 An alternative that considers including the Pacific Coast and the Great Lakes in the CBRS appears in the 1983 FES and is identified as the "Broad Alternative." This supplemental LEIS only considers alternatives not covered by the 1983 FES.

When the CBRA was enacted in 1982, Congress only included coastal barriers on the Atlantic Ocean and Gulf of Mexico coastlines in the CBRS. The legislative history does not clearly indicate whether Congress intended to expand the CBRS eventually to include other coastlines. Because congressional intent is unclear, the DOI will only complete studies of other coastlines if Congress enacts legislation directing it to do so.

March 15, 1988
Page 3

[illegible] coastal barriers, and Representative Eckart plans to introduce a similar bill sometime in March.

In addition, nine Representatives from the Pacific coast delegation signed a letter to the Department on February 24, 1988 which requested that the Department revise its 1985 maps of potential Pacific coast system units, hold educational follow-up hearings, and write a report outlining how the Act dovetails with the Coastal Zone Management Act to complement and strengthen existing state coastal zone programs. Representative DeFazio also recently expressed his support for the inclusion of State-[illegible] natural and conservation areas into the system at the [illegible] coastal barrier workshop [illegible] Pacific [illegible] and [illegible] chairman of the [illegible] Marine and Fisheries Committee [illegible] a hearing [illegible] the system.

[illegible] the state level, [illegible] Great Lakes states [illegible] coastal barrier [illegible] within the system [illegible] written letters [illegible] the Great Lakes [illegible]. The [illegible] has made a written request for updated maps of the areas which meet the Act's criteria for [illegible].

[illegible] recently [illegible] coastal barrier workshops in the Great Lakes and Pacific coasts in response to interest in the system. Speakers and participants at these conferences included Representative DeFazio, congressional staff, state officials, [illegible] scientists on coastal geology and sea level rise, and coastal conservationists from the Great Lakes basin and Pacific coast.

The very high level of interest in and support for inclusion of Great Lakes and Pacific coast [illegible] the [illegible] to the CBRS [illegible] of the Department [illegible] Great Lakes and Pacific coastal barriers in the system as a "reasonable alternative" [illegible] that must be evaluated in the EIS.

Other coastal barriers eligible for inclusion in the CBRS that have been [illegible] by the Department include those listed in Appendix [illegible] to the comments of the National Wildlife Federation [illegible], the Coast Alliance and the [illegible] Society [illegible] 1987 comments on the draft report to Congress. These additional Atlantic and Gulf coast barriers meet the Department's criteria; inclusion of these barriers in the CBRS represents a "reasonable alternative" that must be evaluated in the EIS.

Evaluation of alternatives with respect to geographic scope is necessary from not only a legal standpoint but from a policy one as well. As the Department has pointed out many times, it is not up to DOI to decide which barriers should be included; that is a decision that the Congress must make. In order for Congress to intelligently decide among the various options for including Coastal Barriers around the country in the CBRS, it must have an analytical basis on which to make a decision. DOI must provide the Congress with information on the benefits and costs of including Coastal Barriers on the West Coast and the Great Lakes, as well as additional Barriers on the Atlantic and Gulf coasts in the LEIS.

1737-2

c. Otherwise Protected Coastal Barriers

We believe that all eligible "otherwise protected" areas should be included within the System, not merely private inholdings and areas made available for development inconsistent with the Act's purposes or long-term conservation. Inclusion of otherwise protected areas within the System would grant the higher standards of protection found under CBRA and would guarantee that no federal funds could be spent on damaging projects within them. Even at the Department disagrees, analysis of this option is essential for an informed Congressional decision on what areas to include in the System. To comply with the NEPA regulations, the Department must evaluate the alternative of including all "otherwise protected" areas.

1737-3

b. The Department Has Failed To Evaluate Conservation Recommendations In The LEIS

Section 4(a)(3) of the Act requires that the Secretary's report to Congress include "recommendations for the conservation of the fish, wildlife and other fauna, features of the System based on a examination and comparison of all management alternatives." The LEIS does not propose any such recommendations, although it does evaluate the potential benefits of proposed conservation measures (negative subsidies) identified in the proposed conservation measures discussed in the DOI report. We believe that should the final report to Congress fail to recommend the enactment or adoption of conservation measures, the report would not comply with the requirements of Section 4(a)(3). Furthermore, the CEQ regulations require that the Department evaluate all reasonable conservation alternatives within the context of the NEPA process. The following are comments on conservation alternatives that are described in the draft LEIS and or should be examined in the final LEIS.

1737-2 An alternative that considers including otherwise protected coastal barriers in the CBRS also appears in the 1983 FES, identified as the "Broad Alternative." This supplemental LEIS only considers those alternatives not covered by the 1983 FES.

1737-3 As required by Section 10(b)(1), all management alternatives for the CBRS are evaluated in Volume I of the CBRS Report to Congress. The DOI is recommending several conservation measures including

1) the addition of associated aquatic habitat to the CBRS,
2) automatic inclusion of otherwise protected coastal barriers in the CBRS if they are ever made available for development that is inconsistent with the purposes of the CBRA,
3) inclusion of qualified excess/surplus federal property on coastal barriers in the CBRS prior to disposal,
4) employment of the user-fee approach for acquisition of coastal barrier property as appropriate, and
5) a joint study of alternative approaches to post-storm redevelopment of coastal barriers.

1737-4

1. Tax Policy Alternatives

We continue to urge the Department to recommend the elimination or substantial reduction of casualty loss deductions for losses incurred on properties within the System and to eliminate Federal tax exemption for bonds for infrastructure on areas within the System. We believe that, in any case, much more than a "very brief look" (LEIS, II-20) at this issue is called for and that the consideration that has been given to this issue in the past by the Department should be reflected in the LEIS.

1737-5

2. Acquisition

We urge that the LEIS include the proposed recommendation made in the 1987 report under "Federal Stewardship - The Acquisition Alternative." In addition, we urge the development of a priority system for the expenditure of available funds to acquire System lands.

1737-6

3. Removal of Subsidies

We also strongly urge that the Department recommend to appropriate Federal agencies that existing permits for construction of projects on or adjacent to coastal barrier units within the System be found to be inconsistent with the purposes of the Act. We also support the recommendation that the Army Corps of Engineers be required to consider the impact of structures on beaches in projects involving coastal barrier units before undertaking shoreline protection projects. Both should be examined in the final LEIS.

1737-7

4. Data Gaps

We endorse the proposal made in the 1987 Report for a joint study to develop guidelines on redevelopment of coastal barriers including the use of storm and shoreline data. We urge the development of criteria for determining the level of damage required to declare an area undeveloped and eligible for the System.

1737-8

5. Define Subsidy - "Essential Roads"

We support the recommendation contained in the 1987 report, with appropriate amendment of the LEIS, for deletion from the Act of Section 6(a)(3) so that Federal funds may be available for the maintenance, replacement, reconstruction or repair of publicly-owned or publicly-operated structures or facilities only if consistent with the purposes of the Act.

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Reproduced from poor document.

CONTINUED RESPONSE TO 1737 NATURAL RESOURCES DEFENSE COUNCIL

1737-4 Volume 1 of the CBRS Report to Congress contains a very extensive discussion of tax options for conservation of the CBRS. The Tax Reform Act of 1986 significantly reduced the exclusions and deductions that influence market signals and the behavior of private decisionmakers. For example, it eliminates long-term capital gains deductions, limits casualty loss deductions, allows only straight-line depreciation of property over a longer time period, restricts interest deductions, eliminates investment tax credits, and imposes at-risk limitations on real estate. Having just accomplished a major tax reform after 2 years of debate and legislative effort, the DOI believes that a period of stability and certainty in the tax law is necessary.

1737-5 Support for acquisition recommendation noted. Both the NPS and the FWS have priority listings for acquisition. Along with other habitats, these lists include those barriers that each agency considers especially important.

1737-6 The DOI believes that requiring regulatory consistency at the Federal level would depart from the basic CBRA premise that conservation can be achieved without increasing Federal regulatory involvement by simply withdrawing Federal financial support for development of undeveloped coastal barriers. A complete discussion and evaluation of regulatory options appears in Volume 1 of the CBRS Report to Congress.

1737-7 Support for a joint study of reconstruction alternatives noted. Development of criteria for determining the level of damage required to declare an area undeveloped would be an appropriate topic for that study.

1737-8 In the 1987 Draft Report, the DOI proposed eliminating section 6(a)(3) entirely. However, as several commenters pointed out, there are some roads that should legitimately be considered essential links, such as U.S. Highway A1A in Florida. The repair or replacement of these roads should be allowed even if it is not consistent with the purposes of the CBRA. Therefore, the DOI recommends no change in section 6(a)(3).

1737-9

b. Dredged Material Disposal

We support the recommendation (contained in the 1987 Report), with supporting discussion in the EIS, for amendment of Section 6(a)(2) of the Act to require the disposal of dredged materials to be permitted in a manner consistent with the purposes of the Act

1737-10

c. Section 5(a) of the Act

We endorse the interpretation of Section 5(a) that was stated in the 1987 Report and we urge the Department to develop guidelines to clarify this interpretation in order to ensure that Federal funding is prohibited for any project outside a System unit which would have the benefit and encourage development of the unit

1737-11

d. Developed Status

The characteristics of development used in the 1981 EIS were used to identify developed areas under the proposed action in the Draft EIS. We accept that phased development was not considered when we applied the Department's definition of developed areas as a criterion for deleting areas from the System. We object, however, to the Department's proposal to consider an area "developed" if infrastructure (roads or a development plan) exists. The decision of whether a barrier is developed should hinge on the presence of a structure, not the presence of infrastructure.

We also oppose the Department's proposal to exclude "isolated, capitalized" areas which otherwise qualify as undeveloped. The amount of money invested in an area is not germane to the decision on whether the Department's criterion of one structure per five acres is met. The Department should adhere to original criteria and exclude consideration of the level of capitalization of a potential Coastal Barrier

1737-12

e. Classification of Undeveloped Portions of a Barrier

(1) Clusters

We strongly oppose the blanket exclusion of all isolated clusters of ten or more structures. As long as the barrier meets the 1981 criteria it should be recommended for inclusion in the System regardless of clustering

1737-9 The proposal in the 1987 Draft Report to amend Section 6(a)(2) runs counter to the basic CBRA premise that conservation can be achieved without increasing Federal regulatory involvement. Therefore, the DOI recommends no change to Section 6(a)(2)

1737-10 In the 1987 Draft Report, the DOI considered a recommendation that guidance be developed to clarify that Federal financial assistance specifically directed to a purpose within the CBRS, even if the project is located outside the CBRS, is prohibited by Section 5(a) of the Act. Upon reevaluating the situations which may arise, the DOI concludes that determinations about whether Federal financial assistance is appropriate can be made on a case-by-case basis and, therefore, makes no recommendation for general guidance

1737-11 Opposition to considering a barrier developed if a full complement of infrastructure is in place to each lot noted. The amount of money invested in an area is not a criterion for exclusion from the CBRS as developed

1737-12 Opposition to excluding isolated clusters of development if the rest of the barrier otherwise qualifies as undeveloped noted

1737-13 • Intensively Capitalized Areas

We strongly object to the Department's proposal to exclude undeveloped areas immediately adjoining "intensively capitalized" areas. The fact that money has been spent in an adjacent area is not a rational basis to exclude an undeveloped portion of coastal barrier from the CBRS. Furthermore, the Department's conclusion that an undeveloped area adjacent to an "intensively capitalized" area will necessarily be committed to stabilization is speculative. Even if this were the case, the federal government is under no obligation to fund stabilization projects on undeveloped unprotected coastal barriers regardless of any adjacent high investment development. Indeed, such structural stabilization is specifically prohibited in Section 6 of the Act as one of the expenditures CBRS was intended to prohibit.

•

1737-14 We object to [illegible] Coast Guard [illegible] the system.

Thank you for considering these comments.

Yours sincerely,

Robert Sutton
Lisa Speer
Natural Resources Defense Council

Keith Mallamann
Coast Alliance

Martin Hanson
Mike Jones
National Wildlife Federation

Sally Hantz
Ocean Society

VIII-27

CONTINUED RESPONSE TO 1737 NATURAL RESOURCES DEFENSE COUNCIL

1737-13 The DOI has drawn the boundaries of proposed units at the interface between the developed and the undeveloped portions of the barrier.

1737-14 Opposition to excluding military and Coast Guard lands from the CBRS noted.

1719

SIERRA CLUB

GULF COAST REGIONAL CONSERVATION COMMITTEE

Louisiana, Mississippi, Alabama, Georgia, and Florida

March 7, 1988

Ms. Audrey L. Dixon
Coastal Barriers Study Group
National Park Service
P. O. Box 37127
Washington, D.C. 20013-7127

Dear Ms. Dixon,

Enclosed, please find the copy edited draft Supplemental Statement to Environmental Impact Statement on Proposed Changes in the Coastal Barrier Resources System. Please note that I have made corrections directly on the manuscript. I am transmitting this edited copy so that you and your staff may take advantage of the approximate 16 hours that I invested in reading and correcting it.

1719-1

I found relatively few errors, but here are a some of the resulting ones:

1. The conjunction however was too often used to start sentences rather than to connect and compare statements.

2. Redundant (alternative) should be hyphenated when the two terms are used as modifiers of alternative.

3. The establishment of acronyms in one part of a section, but the continued use of the entire multi word terms later in the same section.

4. The incorrect use of parentheses within parentheses rather than the correct use of brackets within parentheses (especially when providing Federal Register references).

5. The use of the term shellfish and no concomitant use of the term finfish when both types of fish are referred to in the same statement.

6. The inconsistent use of complete and incomplete sentences in Table 6 (pages II 21 through II-24).

7. The use of too many noun modifiers for some subjects (e.g. page III-3).

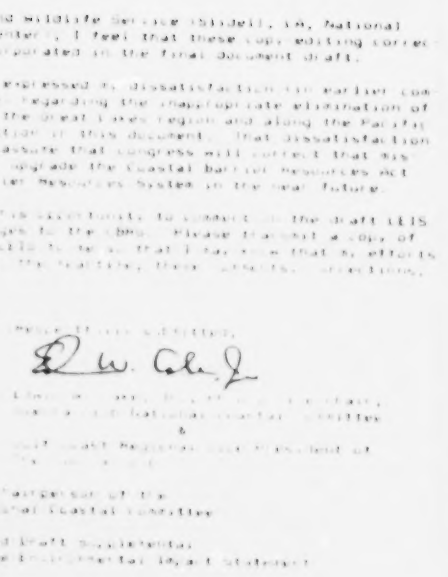
8. The use of which rather than that when the latter is the appropriate or formal writing.

NOT BLIND OPPOSITION TO PROGRESS, BUT OPPOSITION TO BLIND PROGRESS

RESPONSE TO 1719 SIERRA CLUB, GULF COAST REGIONAL CONSERVATION COMMITTEE

1719-1 Appropriate corrections have been incorporated into the final LEIS

1719-2



VIII-30

CONTINUED RESPONSE TO 1719 SIERRA CLUB, GULF COAST REGIONAL CONSERVATION COMMITTEE

1719-2 Support for adding the Pacific Coast and Great Lakes barriers to the CBRS noted

SIERRA CLUB

LONE STAR CHAPTER
COASTAL AFFAIRS COMMITTEE

F. Hermann Audenberg, Ph.D.
[illegible] Avenue Q 1/2
Galveston, Texas 77550
12 March, 1988

Audrey L. Dixon
Coastal Barriers Study Group
National Park Service
P. O. Box 37127
Washington, DC 20013-7127

Dear Ms. Dixon:

These comments pertain to the Draft Supplemental Legislative Environmental Impact Statement on Proposed Changes to the Coastal Barrier Resources System. In the past I have commented at public hearings and written profusely at every level of CBRA activity. This draft supplement has several errors which require correction; in addition, I wish to reiterate some observations derived from my direct experience with CBRA as in reviewing the Bolivar, TX, areas with Congressional legislative aides for several legislators, for our local Congressional representative.

1732-1 A. Page II-1a re exhibit A for "national security" relates to [illegible] military activities. Since most DOD and military uses, including many other activities, without exception is not legally prohibited by the CBRA system. Any other distribution by the authors is ratified to fit the law.

1732-2 B. The "otherwise protected" category should explicitly state that no matter how these areas are affected the protection is inclusive of the CBRA protection. In addition, to avoid the waiting of federal dollars, flood insurance should be available only for presently insured structures and not to renewable if it is once used. It is equally as ridiculous to expect Uncle Sam to continue to rebuild storm-destroyed recreational public facilities, as occurs. "Otherwise protected" does not imply the restraint from use of federal funds that the CBRA provides; nor does it protect non-federal areas according to federal law. Furthermore, double protection is a ridiculous attribute.

1732-3 C. Table 2 makes reference to non-storm proof wildlife and fishing structures. This is entirely inadequate since things like feeding facilities, shelter sheds, or large, open-sided structures, inevitable damaged during a storm, are not very large. The subject of "habitat" be included should be altered to be to exclude those small structures with walls and roof which are in such state of that they cannot adequately serve to shelter man. Perhaps one should also include a need for [illegible] water, sewage-disposal, and electricity for human use. Small rain shelters for animals, feeding structures, or weathered or dilapidated structures with walls and roof of over [illegible] square feet should not qualify.

"We have no way to pick out anything by itself; we find it hitched to everything else in the universe." John Muir

[illegible]

RESPONSE TO 1732 SIERRA CLUB, LONE STAR CHAPTER

1732-1 It is the Department's understanding that most military activities along the Atlantic [illegible] Gulf coastlines are essential to National Security. Therefore, the [illegible] recommending that military lands be deleted from the CBRS.

1732-2 Opinions noted - no response needed.

1732-3 The reference to structures cited in the letter is for the Low Level Alternative covered in the 1983 FES. Other alternatives, including the Proposed Action, only consider insurable structures.

Page 2 Coastal Barriers Study Group 12 March, 1988

4) Page III-1, indicates an anticipated sea level rise of 40 cm/40 years and a past 12 cm over 100 years. These are both in error. Documentation is enclosed. At Galveston the Corps has shown in the past that from 1900 to 1970 the rate has been at a rate of 2 feet per 100 years, i.e. 5 times your figure. Sea level rise is accelerative, according to projections which have been made. Several scenarios are available for Sea Level Rise if only CO_2 is considered; since that time it has become clear that other gases must be considered also, suggesting that the figures shown are on the low side. In any event, a worst case scenario must be stated in this EIS since it MUST follow the 1986 guidelines. That would be 60 cm by 2025, since these figures are published; with inclusion of inert gases in the calculation, as such as a doubling of this is not out of line. Hopefully it will not come to this, but 40 cm is too little.

1732-4

5) The problem with the construction of the sea level rise response is that this may not be "flooding" in the standard sense of a sudden catastrophic occurrence; rather it is a coastal storm. Since sea level rise times are not linear but the MEAN is linear (part of unexplainably curved sine function) the impact of sea level rise may be manifested itself with a storm, a sudden catastrophic occurrence.

1732-5

6) Congress did not have full faith and credit to improve the flood insurance, i.e., it is not perfect, but you (we) now have an infrastructure which permits flexibility in Congress in this direction [illegible]. I would hope that this is possible in this EIS so as to [illegible] relative action, etc., to what extent this is done in the EIS. For example, what happens if an area is suddenly denuded by a major storm -- or it is destroyed, or some other matter -- but it had received federal subsidies? If the area is behind a sea wall, or at elevation, does that cast a difference? A guiding pattern concerning inclusion in the CBRS might be logical, but not in every conceivable situation. Surely, individuals with major federally insured losses should not be permitted to repeat the risk exposure.

1732-6

7) Since sea level rise affects all outer coasts of the US, and all are equally victim to the forces of action of storms, I would note that needs for inclusion of the Pacific and Great Lakes coasts be made more apparent. At this time, those coastal barriers which are feasibly of little should definitely be included, either in the body of this document, a cut-off date should now be stated (as well as a timetable) that specific action is to be, e.g., for 5 years. Similar to the October 1982 deadline, this would put coastal developers on notice that changes needed in the law in order to include these shores and which must be included in Congress should be delineated in the present EIS also.

1732-7

8) Regarding Table 1, I would find it more useful if for the [illegible] to the left to [illegible], additional data included how much is undeveloped and wetlands and cannot be built upon, or alternately how much is feasible.

1732-8

[illegible] for this opportunity to comment.

[illegible]

CONTINUED RESPONSE TO 1732 SIERRA CLUB, LONE STAR CHAPTER

1732-4 The LEIS stated that global sea level has increased about 12 cm over the past 100 years, but that rate could increase to about 1 cm/yr over the next 40 years due to global warming. One cm/yr is an average predicted increase. A range of predicted increases has been added to the final LEIS. A more complete discussion of sea level rise appears in Volume I of the CBRS Report to Congress (Chapter II).

1732-5 Opinions noted - no response needed.

1732-6 Opinions noted. The DOI is recommending that Congress enact legislation directing that a joint study be undertaken by the DOI, U.S. Army Corps of Engineers, the Department of Transportation, the Federal Emergency Management Agency, and the National Oceanic and Atmospheric Administration, in consultation with the States, to develop additional options for consideration by Congress. Such options should include guidelines on which Federal agencies would base decisions concerning redevelopment or reconstruction of coastal barriers following storms and alternative ways to address Federal subsidies on all coastal barriers.

1732-7 An alternative that considers adding all coastlines to the CBRS is contained in the 1983 FEIS.

Support for including other coastlines in the CBRS noted.

1732-8 Table 1 in the final LEIS has been revised to include the total amount of fastland in the existing CBRS and in the recommendations in each State or territory. Volumes 2-22 of the CBRS Report to Congress contain tables that list the amount of fastland in each existing or proposed unit in that State or Territory.

1739

SIERRA CLUB

Houston Regional Group
1413 Westheimer
Houston, Texas 77006

March 12, 1988

Audrey L. Dixon
Coastal Barriers Study Group
National Park Service
P.O. Box 37127
Washington, D.C. 20013-7127

Dear Ms. Dixon,

Enclosed are the comments of the Houston Sierra Club concerning the Draft Supplemental Legislative Environmental Impact Statement on Proposed Changes to the Coastal Barrier Resources System. Please send us a copy of the final document when it is completed.

1739-1 In general we support most of the recommendations made in this document. Our principal concern is that the tier level protection alternative could have been a much better alternative to choose. In addition we support the inclusion, not exclusion of federal, state, local, and private protected lands in this system to ensure their abuse is not allowed. It would be very easy to have a clause which would allow some development for recreation or wildlife uses of these lands provided a full public participation and input process were required before any decision were made to go forward with a project or to not go forward with a project. We also support a CBRS for the Great Lakes and the Pacific Coast as these resources are just as important and valuable as the ones on the Atlantic and Gulf Coasts. The following comments are our specific page by page comments of this document.

1739-2 1) Page II-1, we support adding all secondary barriers to the system.

2) Page II-1, we also support adding coastal formations that have the same functions that barriers have, adding aquatic habitats associated with CBRS units, and adding privately owned undeveloped and unprotected coastal barriers or inholdings to the system.

1739-3 3) Page II-2, we are pleased to delete such lands that are "otherwise protected". We noted the reasons and an alternate mechanism to get needed development added in the narrative above. We support the OBA adding lands to CBRS before disposal of such lands and also support adding privately owned lands. However, this should be a mandatory finding and not at DOI's discretion.

4) Page II-6, as stated previously we want coastal barriers established on the Great Lakes and Pacific Coast now. No further delay is warranted as the importance of these areas has been documented previously.

1739-4 5) Page II-7, we fully support the inclusion of Florida Keys, Puerto Rico, and the U.S. Virgin Islands as well as the certificate concerning dispositis, silt and clay areas, fringing marshlands, and glacial and bedrock deposits into the CBRS.

RESPONSE TO 1739 SIERRA CLUB, HOUSTON REGIONAL GROUP

1739-1 Support for the high level protection alternative noted. Opposition to excluding otherwise protected barriers and the Pacific and Great Lakes coastlines from the CBRS noted.

1739-2 Support for adding secondary barriers, associated aquatic habitats, and inholdings to the CBRS noted.

1739-3 Support for adding surplus federal lands to the CBRS noted.

1739-4 Support for adding barriers to the Florida Keys, Puerto Rico, the Virgin Islands, and an expanded definition of coastal barriers noted.

1739-5 6) Page II-12, Table 6, we fully support the 9 unit additions of secondary coastal barriers in Texas.

7) Page II-13, we are against deleting otherwise protected area. This may allow unacceptable recreational development or encroachment of other facilities which are ancillary to recreational facilities. Federally protected areas should be included in the coastal barriers system.

1739-6 8) Page II-14, we do not support all military lands being excepted from the CBRS. Only those lands that will be needed by the military for war zones, facilities, etc. should be so treated. All others lands should be included in the system.

1739-7 9) Page II-14, we are concerned about the abuse of undeveloped areas immediately adjoining intensively capitalized areas. There needs to be a more strict definition to protect as large an area as possible of these areas that are not currently developed. Otherwise pressure may exist such adjoining lands are needed for development unnecessarily.

1739-8 10) Page II-15, we would be in favor of taking policies which penalize persons who develop sensitive areas like barrier islands and reward those who do not try to develop such areas. The inherent ecological importance of the areas makes such policy necessary so that natural values will be preserved and federal subsidies for building in such risk prone policies are not utilized.

1739-9 11) Page II-24, Table 5, we support the risk level alternative which partially prohibits barrier islands. HUD does not give the low level and high level alternatives a full consideration and analysis for this document. This is a very clear violation of NEPA and must be addressed in the FEIS.

1739-10 12) Page II-26, we feel that the federal permit system has done an inadequate job of protecting flora and wildlife. Political pressure keeps Director offices of Fish and Wildlife Service from publicly attacking Corps attacks on the permit system while EPA is so weak that it only looks on in Texas. Natural resources including coastal barrier islands and associated habitats are not protected by the federal permit system.

13) Page III-3, 4., barrier islands are not the cause of short-term reoccurring use of federal monies. People are the cause of this.

1739-11 14) Page IV-10, we want the 7½ mile stretch of South Padre Island put back in. It is undeveloped and a very valuable wildlife habitat and should not be destroyed via federal subsidies which encourage further development in other hazard risk areas.

1739-12 Finally we oppose any of the deletions that are being proposed for the [illegible] Islands Preserve, [illegible] Padre Island Brazoria, [illegible] Brazoria and Matagorda, and the [illegible] San Jose Island Complex Calhoun, Aransas, and Nueces since they are state or federally protected areas as explained further in our letter.

We appreciate this opportunity to input and look forward to getting a copy of the final document. Thank you.

Sincerely, Sharon Mansoor, Conservation Committee, Houston Sierra Club, 529 Euclid, Houston, Texas 77006, (713)-861-7552, (713)-[illegible]-4311

CONTINUED RESPONSE TO 1739 SIERRA CLUB, HOUSTON REGIONAL GROUP

1739-5 Support for the addition of secondary barriers in Texas to the CBRS noted

1739-6 Opposition to excluding all military lands from the CBRS noted

1739-7 The DOI has drawn the boundaries of proposed units at the interface between the developed and the undeveloped portions of the barrier

1739-8 Support for tax alternatives that would discourage development noted

1739-9 The low and high level alternatives are presented in detail in the 1983 FES. This supplemental LEIS only considers those alternatives not covered by the 1983 FES

1739-10 Opinions noted - no response needed

1739-11 Although the 7½-mile stretch of South Padre Island is undeveloped according to DOI criteria, the DOI is not recommending its addition to the CBRS because it was recommended in 1982 and Congress considered and rejected it during its deliberations on the CBRA. If the Congress wishes additional information regarding this area, the DOI will provide it upon request

1739-12 Opposition to deleting otherwise protected areas in Texas from the CBRS noted

Barrier Island Task Force

March 10, 1988

Audrey L. Dixon
Coastal Barriers Study Group
National Park Service
1375 "A" Street, Room 400
Post Office Box 37127
Washington, D.C. 20013-7127

Re: "Draft Supplemental Legislative Environmental Impact Statement on Proposed Changes to the Coastal Barrier Resources System" (January 1988)

Dear [illegible]:

The Barrier Island Task Force welcomes the opportunity to comment on the [illegible] DEIS. As you are aware, the Task Force was [illegible] a DEIS and the [illegible] of the coastal [illegible]. Please find the Task Force's comments below. Documents to [illegible] Legislative [illegible] are indicated by [illegible].

[illegible] Barrier Island Task Force Report, "Barrier Island Task Force Report, September 1987"

[illegible] Letter from Jerry Kotzan [illegible] June 2, 1988, re: "Report [illegible] Coastal Barrier Resources System," March [illegible]

1734-1 The Barrier Island Task Force strongly urges the Department of the Interior to [illegible] regarding [illegible] coastal resources, and we have [illegible] those in our previous submissions. However, we must take issue with several statements within the draft LEIS. The LEIS explains on [illegible] page 1 that development of coastal areas [illegible] that is not economically viable or [illegible] but that [illegible] only [illegible] is authorized by a [illegible] of the federal [illegible]. Several statements are made [illegible] that are [illegible] of the [illegible] of the [illegible] Federal [illegible] Act. The [illegible] Congress intends to [illegible] in the process

RESPONSE TO 1734 BARRIER ISLAND TASK FORCE

1734-1 Information noted. The DOI has revised the LEIS to ensure that it does not imply that State and local governments do not participate in the management of coastal resources

March 10, 1988
Audrey L. Dixon
Page 2

of developing a Padre Island-Mustang Island Area Development Plan as part of a new City Comprehensive Development Plan. The State of Texas and the Texas General Land Office are also active on coastal issues such as the Texas Open Beaches Act, beach cleaning programs, and support of provisions of Annex V of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78). Garry Mauro, Texas Land Commissioner, and Senator Lloyd Bentsen have been instrumental in pushing legislation through Congress to prohibit dumping of solid wastes in the Gulf of Mexico, as an amendment to Annex V. The State Board of Insurance has also taken steps to insure higher quality residential and commercial construction in Texas coastal counties through strengthened inspection procedures implemented January 1, 1988, as part of the Texas Catastrophe Property Insurance Pool (CATPOOL) program requirements.

In previous submissions, the Task Force has requested responses on several issues from DOI, to date we have received no response or acknowledgement of our requests. The Task Force is especially
1734-2 concerned about the impact on operations and maintenance of the Gulf Intracoastal waterway, and whether the GIWW is protected under exemptions provided by the Coastal Barrier Resources Act of 1982 (CBRA) for water navigation. A related issue is provision for adequate dredge [illegible] sites, which must be provided by the state sponsor, the Texas Department of Highways and Public Transportation.

The Task Force and local governments are also concerned regarding the [illegible] impact of the Proposed Action on the [illegible] economy, and local,
1734-3 state and federal tax revenues. We acknowledge that the Draft LEIS [illegible] probable impacts of the Proposed Action on owners and developers [illegible] page [illegible]. However, the Task Force recommends that a detailed study also be included in the LEIS related to the probable [illegible] the impact on local [illegible] as illustrated by statements such as "It is extremely difficult to isolate the potential impacts of including an area in the CBRS from the impacts of these other factors on the decision to develop a particular parcel of land." The Task Force acknowledges that several [illegible] to affect development, however local, state and federal governments [illegible] make decisions without a complete analysis of the impact on [illegible] tax revenues of any proposed action. While it may be difficult to isolate individual causes of [illegible] trends, the impact [illegible] the economy and tax revenues is vital to long-range planning for local, state and federal governments. The Task Force's 1987 report [illegible] tax revenue [illegible] the impact [illegible] state and federal tax revenues, based on the Texas Input-Output Model. The Task Force strongly recommends that the Draft LEIS include a similar analysis of the probable impacts of the Proposed Action.

While [illegible] attempting to [illegible] probable impacts of the Proposed Action [illegible] the [illegible] base and tax revenues, the Draft LEIS makes several references to costs to the federal government through subsidies and programs, such as the Federal Flood Insurance Program. The LEIS

CONTINUED RESPONSE TO 1734 BARRIER ISLAND TASK FORCE

1734-2 The DOI is recommending that the GIWW be excluded from the CBRS. The disposal of dredged materials in the CBRS is not prohibited by the CBRA.

1734-3 A more detailed analysis of local impacts would require independent economic analyses in each of the more than one hundred areas affected by DOI's recommendations. This clearly was not feasible. The Task Force model is applicable only to south Texas, it is not transferable to other barrier coastlines.

makes reference to four case studies (Miller, 1981), and uses them as basis to project an estimated cost to the federal government of $765 million in subsidies, and an estimated total replacement cost of $1.63 billion, under the No Action alternative. The Task Force questions the validity of DOI's projections. Despite repeated requests, the Task Force has received no response from DOI to provide a breakdown of the "alleged subsidies". The Task Force has been advised by FEMA officials that the Federal Flood Insurance Program has been restructured and is now self-supporting. The Task Force is not aware of any studies that provide a complete breakdown of federal program expenditures based on barrier islands vs. coastal mainland vs. non-coastal mainland. Hurricane dollar losses reported in the 1985 Draft Report to Congress on Hur [illegible] for Galveston County and Harris County following Hurricane Alicia included a high percentage of losses in the Houston area, and did not include a dollar breakdown for Galveston Island. The Task Force also requests information regarding how the LEIS subsidy projections were generated. For example, how were federal funds for [illegible], airports, wastewater, etc. allocated to barrier islands using a conservative estimate of 5,000 developed acres on Texas barrier islands, the LEIS estimates would translate into over $1.2 [illegible] dollars in total federal subsidies for Texas barrier island developments. The Task Force would be interested in knowing where all of these federal dollars were expended.

1734-4

1734-5

The Task Force states that [illegible] related to sea level rise [illegible] that [illegible] is a significant and serious issue for coastal [illegible]. However, the Task Force further states that the LEIS assesses the relative sea level rise for various Gulf and Atlantic coastal areas based on qualitative data related to polar melting, hydrological [illegible], subsidence, and plate tectonics. The South Texas coast is [illegible] to other coastal areas.

1734-6

The Task Force also makes brief comments regarding public safety and emergency shelter evacuation. South Texas is mentioned in the LEIS as one of the primary areas of concern (LEIS, page IV-15). With the growth of seasonal and year-round populations on Mustang Island and Padre Island, the Texas Department of Highways & Public Transportation [illegible] has given a high priority to improvements to the John F. Kennedy Causeway connecting the City of Corpus Christi mainland to North Padre Island. [illegible] efforts are to include widening and extending the existing [illegible] with a [illegible] to provide adequate storage [illegible] and [illegible] lanes. As a long-range plan, this [illegible] the [illegible] of the JFK Causeway over the Corpus Christi Ship Channel to the Padre Island National Seashore. The [illegible] Corpus Christi Bay Area Corpus Christi Chamber of Commerce, Refineries, Port [illegible] Padre Island, the Port Island Causeway, and provide [illegible] for emergency shelter evacuation. The LEIS incorrectly refers to the Port Isabel Causeway as Brownsville, page IV-15). These examples illustrate that South Texas communities are preparing for projected [illegible] growth to provide adequate public safety and evacuation routes.

CONTINUED RESPONSE TO 1734 BARRIER ISLAND TASK FORCE

1734-4 In enacting the CBRA, the Congress determined that development on coastal barriers was risky and the Federal government should not be subsidizing it. Although a comparison of flood losses on coastal barriers compared to inland areas would be interesting, it is not germain to the LEIS.

A percentage breakdown of the total estimated Federal subsidy is as follows:

roads, bridges, and causeways	41%
sewers and wastewater treatment	28%
water supply systems	15%
disaster relief	7%
flood insurance	6%
shore protection	3%

A discussion of these costs appears on page IV-48 of the 1983 FES.

Although FEMA's goal is to make the Federal flood insurance program self-supporting, it has not yet reached this goal.

1734-5 For the purposes of the LEIS, the National Academy of Science's general estimate of sea-level rise is sufficient.

1734-6 Information noted. The reference to the Queen Isabella Causeway in the LEIS has been corrected.

The Task Force also requests clarification of several additional statements within the LEIS, as referenced in the attachment to this letter.

In conclusion the Task Force will appreciate your consideration of our recommendations. While we recognize the efforts of DoI to protect and preserve our coastal resources, we believe that it would be valuable for Congress to conduct an independent assessment of the implications of the Proposed Action.

Please contact us if you require any additional information.

Respectfully,

Linda Strong
Chairman
Barrier Islands Task Force

Texas Legislature

The Honorable
Member, State of Texas

Larry Hall
Texas

Judge Robert Barrera
Nueces County

Hal J. Reed, Mayor
City of Corpus Christi

Joe Garza, City Manager
City of Corpus Christi

Barrier Island Task Force
Corpus Christi Chamber of Commerce
Comments re Draft LEIS
March 1988

	Page	Comments
1734-7	II-2 (a)	The Task Force opposes granting the General Services Administration authority to add excess Federal coastal barriers properties to the CBRS. The original intent of CBRA was to require all additions and deletions from CBRA to be subject to approval by Congress
1734-8	II-2 (p)	The Task Force opposes granting DOI authority to add any coastal barrier properties to the CBRS without approval by Congress
1734-9	II-11 (a)	The Task Force opposes the addition of any secondary coastal barriers as recommended by the Proposed Action (CBRA was originally drafted to include primary coastal barriers only)
1734-10	[illegible]	The statement "The Proposed Action therefore would provide new otherwise protected land in the existing CBRS [illegible] as mandated by CBRA specifically excludes all 'otherwise protected' coastal barriers." The Task Force is opposed to this exclusion to continue
1734-11	II-18 (f)	The Task Force questions the methodology used to determine what constitutes aquatic habitat under the Fish and Wildlife Act. The Task Force further contends that the DOI must not inadvertently extend across the Gulf intracoastal waterway
1734-12	II-19 (f)	The statement that "otherwise protected coastal barriers in the existing CBRS would remain in the System under the No Action alternative" is incorrect. "Otherwise protected" areas are already excluded from the CBRS
1734-13	II-19 (f)	The statement that "otherwise protected areas were excluded by Congress from the CBRS in 1982"
1734-14	V-3	The Task Force questions the use of additional federal regulations for local and state governments to implement land use plans and other regulations. Corpus Christi Bay Area governments and the State of Texas have already implemented regulations to protect coastal resources
1734-15	IV-43 (a)	The Task Force requests evidence of the argument

CONTINUED RESPONSE TO 1734 BARRIER ISLAND TASK FORCE

1734-7 Opposition to automatic inclusion of qualified excess federal property in the CBRS noted

1734-8 The DOI is recommending that otherwise protected coastal barriers which are made available for development that is inconsistent with the CBRA purposes be automatically included in the CBRS. Opposition noted

1734-9 Opposition to including secondary barriers in the CBRS noted

1734-10 The existing CBRS does contain several otherwise protected coastal barriers. The DOI is recommending that these areas be deleted from the CBRS.

1734-11 The DOI is recommending that the GIWW be excluded from the CBRS, however, qualified associated aquatic habitats landward of the GIWW are recommended for addition to the CBRS

1734-12 The existing CBRS does contain several otherwise protected coastal barriers. The DOI is recommending that these areas be deleted from the CBRS

1734-13

1734-14 Comment noted — no response needed

1734-15 The EIS does not make this statement. The EIS does say that development of coastal barriers "may entail long-term economic costs associated with beach nourishment, erosion control, channel maintenance, pollution control, and declining productivity of fisheries that depend upon a natural system."

		presented that "long term economic costs" will out weigh "short term economic benefits for local markets, employment, and tax bases"
1734-16	p. 1-5	The reference to South Texas should be capitalized
1734-17	p. 1-7	The court case cited related to Federal condemnation proceedings at Shackleford Banks, North Carolina (1971) should be explained in more detail, or deleted, as stated, the reference is misleading and is subject to misinterpretation
1734-18	p. 1-8	The availability of private flood insurance is limited, and should not be used as an argument for elimination of federal flood insurance in coastal areas, according to FEMA officials, the flood insurance program is self sustaining. Coastal barrier property owners should be entitled to the same opportunities as property owners throughout the United States, subject to FEMA underwriting guidelines
1734-19	p. 1-9	The reference to South Padre Island should be capitalized, the Town of South Padre Island is a governmental entity

1734-16 Correction has been made in the LEIS

1734-17 More explanation of the Shackleford Banks court case has been added to the LEIS text

1734-18 Although FEMA's goal is to make the Federal Flood Insurance program self-supporting, it has not yet reached this goal. At the point that the federal flood insurance program becomes self-supporting, private insurers will probably enter the market

1734-19 Correction has been made in the LEIS

CITIZENS TO PRESERVE
South Texas Economic Resources, Inc.
P.O. Box 3023, (512)761-7801
South Padre Island, Texas 78597

Coastal Barriers Study Group
U.S. Dept. of the Interior
National Park Service 498
P.O. Box [illegible]
Washington, D.C. 20013-7127

RE: COMMENTS REGARDING DRAFT SUPPLEMENTAL REGULATION ENVIRONMENTAL IMPACT STATEMENT ON PROPOSED CHANGES TO THE CBRA SYSTEM

[illegible]

[illegible] made [illegible] area of South Padre Island located [illegible] of the existing town of South Padre Island and [illegible] to the end of State Highway 100. This area has been [illegible] Unit #1 (1).

[illegible] South Padre Island located [illegible] approximately 8.5 miles of [illegible] Unit #1 (2) of CBRA.

[illegible] Chamber of [illegible]

[illegible]

VIII-41

RESPONSE TO 1745 CITIZENS TO PRESERVE SOUTH TEXAS ECONOMIC RESOURCES, INC

1745-1

1745-2

1745-3

1745-4

CONTINUED RESPONSE TO 1745 CITIZENS TO PRESERVE SOUTH TEXAS ECONOMIC RESOURCES, INC.

1745-1 According to DOI criteria, an area must have a full complement of infrastructure in place to each lot in the development or at least one structure/5 acres of fastland to be considered developed. The 75-mile stretch is fully undeveloped according to these criteria, however, the DOI is not recommending its addition to the CBRS because it was recommended in 1982 and Congress considered and rejected it during its deliberations on the CBRA. If the Congress wishes additional information regarding this area, the DOI will provide it upon request.

1745-2 Opinions noted - no response needed.

1745-3 Opinions noted. In enacting the CBRA, the Congress has determined that development on coastal barriers is risky and should not be supported by the federal Government.

1745-4 According to DOI criteria, the proposed additions to T12 are undeveloped. Information and opinions noted.

Many millions of dollars have been spent in this area for infrastructure needed for development. Congress and the Department of the Interior should, upon re-evaluating Boca Chica (T-1), as well as South Padre Island area (T 11), which are already designated by the CBRA as undeveloped, give serious consideration to deleting these areas as they both are vitally important to the growth of the Rio Grande Valley area and both will contribute through their development greatly to the local economy. The deletion of these areas would not sufficiently alter the ecological balance which is to be sought.

In summary, we, the members of the Citizens to Preserve South Texas Economical Development, urge you to strongly consider the deletion of Units T-11 and T-12 of the CBRA and that further consideration be given to the addition of the 7.5 mile [illegible] of South Padre Island with all the rest of South Padre Island. Should you have any questions regarding the above comments please do not hesitate to call.

[illegible]

[illegible]

President
[illegible]
[illegible]

Vice President
[illegible]
[illegible]

Committee to Preserve Assateague Island, Inc.

March 16, 1988

Mr. William P. Horn, Asst. Secretary, for
Fish, Wildlife and Parks
U. S. Department of the Interior
Washington, D. C. 20240

Dear Mr. Horn,

I appreciate the opportunity to make a few comments on the Draft Supplemental Legislative Environmental Impact Statement on Proposed Changes to the Coastal Barrier Resources System, and will be as brief as possible.

The Coastal Barrier Resources System is vitally important for many reasons. It is most important that the undeveloped coastal barriers be cut off from federal subsidies for infrastructure (utilities, roads, etc.). Federal flood insurance and any funding that would encourage development in these high hazard, dynamic areas. Federal flood insurance is second only in cost to Social Security, but far less good. Where large dollars are concerned, this does not even come close to billions in the huge sums expended for disaster and relief. People continue to build, many lose, be sold lives in these hazardous areas, and the taxpayer doesn't mortgage the rest of these irresponsible, absurd homes. It makes no sense. Everything possible should be done to help cut the deficit by eliminating government funding of support structures in high hazard areas on barrier islands.

1759-1

It is equally important that some of the islands in natural use, such as the Chesapeake Bay and Delaware Bay be included, and islands in the coastal bays such as Chincoteague & Ocracoke, Hog Island, Assateague, Virginia Key, etc. should also be included as they also buffer great artificial and funding. There are ridiculous projects & for behind here condominium development on Smith Island in the Chesapeake, which buffers tremendous expansion. Had devastating flood damage during storms lapses in the 50's and the famous March 1962 storm. It and there is no sewage system to take care of increased development, and access is only by boat from the mainland, which cannot get to the islands during storms. Think what this means to be.

1759-2

Tangier Island, which has more and more flooding and erosion problems, is now to face the high cost of taxpayer's expense. A small island in the Chesapeake, which buffers tremendous expansion. Had devastating flood damage during storms lapses in the 50's and the famous March 1962 storm. It and there is no sewage system to take care of increased development, and access is only by boat from the mainland, which cannot get to the islands during storms. Think what this means to be.

Federal, state parks and national wildlife refuges should be [illegible] this I say highly experienced with Assateague Island [illegible].

1759-3

Internally, I [illegible] areas that lack wide [illegible] natural, state parks and national wildlife refuges should be [illegible] this I say highly experienced with Assateague Island [illegible].

The National Seashore is proposing and is seeking political support to spend anywhere from $12 to $43 million to try to stop erosion along the northern five miles of Assateague Island, basing this on the fact that the accelerated erosion is unnatural due to the littoral drift being cut off by the Ocean City Inlet Jetties. Likewise, Assateague State Park [illegible] miles of shoreline starting at about mile 6 south of the inlet, is urging the National Seashore to do something as the erosion is creeping south and it is being affected. Everyone can also see that sea level rise is increasing storm damage along the

VIII-44

RESPONSE TO 1759 COMMITTEE TO PRESERVE ASSATEAGUE ISLAND, INC.

1759-1 Support for the CBRS noted.

1759-2 Support for adding secondary barriers to the CBRS noted.

1759-3 Support for including otherwise protected coastal barriers in the CBRS noted.

entire island.

The local people did not support Assateague becoming a national seashore until the 1962 storm had it mostly underwater and the road and nearly all attempts at development were rolled out. At hearings held in 1972 it was pointed out by Dr. Eugene Cronin that too much development has already taken place on the State Park which was deemed to suffer severe damage when the next Big storm struck. Historically, three catastrophic storms per century have hit that section of the coast. So far there have been two this century -- in 1933, when the Ocean City inlet was created, and in 1962 -- making 1992, plus or minus, we should be due for the next Biggy. In the meantime, those in charge of the Park and did not live through those earlier storms and comfortably forget what is in store, while they try to get millions of federal dollars invested in protecting the whole investment of facilities that has already taken place, plus millions for additional development.

While the Natural Seashore's initial environmental assessment on trying to stop the erosion at the north end did not address a "do nothing" option at its suggestion that is now being looked into and more information will be available on that alternative. That would be less expensive and would give Dan O. Assateague's sand (not simply the littoral drift being cut off by the inlet). That would be acceptable if not too expensive. But a massive portion of sand for offshore could exacerbate shoaling problems for the south end of the island. Erosion is a result of the sun and

Assateague's main problem at present is stabilizing a narrow strip of land a few miles in the middle. It is being built as close to the Bay as possible. Unrestricted filling of wetlands and tidal water not a good practice for a government agency. It is being raised, which will not act as a dike and prevent sand from being carried from ocean to bay. It is preventing the island from maintaining its width as it naturally migrates westward. They seem to have forgotten that during storms as much sand usually comes from the Sunset as from the ocean. Also that all [illegible] of Assateague in the past were destroyed by storms as the island is now.

[illegible] Assateague [illegible] the refuge [illegible] the [illegible] of Assateague [illegible] [illegible] the refuge not with an area of dark water in the middle. [illegible] some of [illegible] the Pleasure [illegible] [illegible] use of the picnic [illegible] it is to build at Tarkenets or [illegible] sense of [illegible] administration building to house offices etc. for both the Refuge and the National Seashore at that end (the latter administers the recreational activities and requires a rather large staff and large numbers of vehicles for the 3 miles it administers during the [illegible] season, 8 miles at other times of the year). During [illegible] season, the visitor center would be moved to this new building, with enlarged facilities and areas for displays and selling items in depots. Coordination with the gift shops and book stores in the town. What was [illegible] for the endangered Delmarva Fox Squirrel would be taken over for this building and for parking. Is that right? Were the lutlolly pines stricken by the Southern Pine Bark Beetle clear cut in this area in

order to accommodate for the planned buildings and parking.

Also in the Master Plan, in the preferred alternative, there were plans for maintenance buildings on the island. When the question came up for this before, the environmental organizations said only minor facilities should be on the barrier island. The Refuge has land on the mainland next to the Nobb Scenic Museum which would be far more suitable for the administration building and for the maintenance buildings which the the National Seashore wants in addition to the buildings needed by the Refuge.

In short, the above provide sufficient factual studies to document why valuable beaches and refuges on barrier islands should be included in the Coastal Barrier Resources System.

1759-4 [illegible] I do not agree that all [illegible] barrier islands should be excluded from the system [illegible]

1759-5 [illegible] Pacific Coast and Great Lakes barrier islands [illegible] included in the system [illegible]

[illegible]

[illegible]

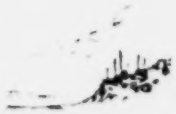
[illegible]

CONTINUED RESPONSE TO 1759 COMMITTEE TO PRESERVE ASSATEAGUE ISLAND, INC.

1759-4 Opposition to excluding military and Coast Guard lands from the CBRS noted

1759-5 Support for including the Pacific Coast and Great Lakes coastal barriers in the CBRS noted

HP Interests



1723-1

1723-1 In 1982, the DOI recommended that the 7½ mile stretch be included in the CBRS, however, Congress left it out. Congress gave no explanation for their decision.

1. Factual Inaccuracies in the DEIS

a. The "single-lane causeway". The DEIS states, (on page IV-20) that on South Padre Island, Texas, the only evacuation route, in case of a hurricane, is a single-lane causeway. In fact, the Queen Isabella Causeway is a four-lane 1723-2 divided highway, which was built in the late 1970's. It was designed and built at that time to accommodate development of the island for many miles to the north. The comments in this portion of the DEIS regarding evacuation problems on South Padre Island are pure conjecture, entirely unsupported by fact. This type of error serves to highlight the primary concern that local Texas residents have in connection with the CBRS; namely, that any state recommendations, having enormous impact on the economic health of this troubled area, are being made by individuals who have apparently never seen the island, and who appear to have no real understanding of the local economy or environment.

b. "No development". The DEIS states (on page IV-18) that "development has occurred on the 7 1/2 mile stretch of South Padre Island that was excluded from the CBRS in 1982. This statement could be made only by someone who is simply not familiar with the island, and who has furthermore failed to read the numerous comments submitted by local developers, landowners and others to the Draft Report to Congress. In fact, substantial development activity has occurred in this area both before and after the 1982 Act. My written comment of June 22, 1987 to 1723-3 the Draft Report to Congress details the millions of dollars of private and local governmental capital which has been invested in infrastructure improvements with respect to this 7 1/2 mile tract. A large portion of this investment has been made since 1986, in reliance on the Congressional exclusion of this tract in 1982. Numerous other comments to the Draft Report to Congress described the sizeable private investment made in the development of this stretch since 1982. While it is true that no structures have been completed in this tract, it is clear, both from the legislative history and from the definition of "undeveloped" land which has been formulated by the Department of Interior, that such private investment in infrastructure constitutes development for the purpose of determining whether a coastal barrier island is developed within the meaning of the Act.

Further, in this regard, the DEIS cites the assessed rate of development of the 7 1/2 mile tract as an example to support the argument that inclusion of a tract of land in the CBRS cannot be demonstrated to cause harm to the local community, since other economic factors affect the decision to develop land. 1723-4 This argument is fallacious in several respects. First, as stated above, there has been substantial development activity

CONTINUED RESPONSE TO 1723 HP INTERESTS

1723-2 The description of the Queen Isabella Causeway has been corrected to describe it as a four-lane divided highway. Members of the Coastal Barriers Study Group visited South Padre Island in both 1985 and 1987. A public meeting in Brownsville was conducted in 1987.

1723-3 According to DOI criteria, an area must have a full complement of infrastructure in place to each lot in the development or at least one structure/5 acres of fastland to be considered developed. The 7½-mile stretch is fully undeveloped according to these criteria; however, the DOI is not recommending its addition to the CBRS because it was recommended in 1982 and Congress considered and rejected it during its deliberations on the CBRA. If the Congress wishes additional information regarding this area, the DOI will provide it upon request.

1723-4 Section 10 of the CBRA directed the DOI to identify undeveloped unprotected coastal barriers. The DOI was not directed to examine why particular areas are undeveloped and economic factors were not criteria for exclusion from the CBRS.

1723-5

1723-6

1723-7

CONTINUED RESPONSE TO 1723 HP INTERESTS

1723-5 The amount of fastland is used as an estimate of the potentially developable land. It is the best available information. Miller's estimates of federal subsidies on barriers are also the best available estimates.

1723-6 Miller's estimate of the cost of federal subsidies is an average one for a typical acre of undeveloped coastal barrier. It is not directly transferable to South Padre Island. However, significantly more public infrastructure would be necessary before intensive development of the barrier could occur. Also South Padre Island is very low-lying and vulnerable to damage in a hurricane. If development occurs, reconstruction subsidies would also probably be necessary.

1723-7 To the best of our knowledge, all qualified undeveloped, unprotected coastal barrier areas under DOI criteria are either in the existing CBRS or recommended for addition to the CBRS. If development pressure is deflected to the mainland, where it would be less hazardous, this is consistent with the purposes of the CBRA.

1723-8

inclusion of the 7 1/2 mile tract into the CBRS. Cameron County, in which this portion of South Padre Island is located, is one of the poorest areas in the nation. The cost of federal government subsidies for welfare and other social service programs resulting from the inclusion of this tract into the CBRS must be considered in any discussion of federal cost savings to be achieved from the expansion of the CBRS.

b. Impact on Owners and Developers of Residential Property. The discussion of the impact of inclusion into the CBRS on owners and developers of affected land (found at Section IV Impacts on page IV-1t of the DLEIS) has no application to South Padre Island. If the 7 1/2 mile tract is included into the CBRS,

1723-9

[illegible] that land will be virtually unmarketable, and the loss to the [illegible] of that land will be immediate and total. This loss will [illegible] millions of dollars invested since 1961, in reliance on [illegible] of this tract. The example of the [illegible] of Galveston Island, an area of the wealthiest and most [illegible] developed areas in the Atlantic Coast, has no [illegible] to the development of South Padre Island, which is located at one of the poorest areas of the nation.

c. Impacts to Local Economy. As I noted above, the [illegible] on page IV-1o) argues that it would be arbitrary, difficult to demonstrate that inclusion of land in [illegible] would have a positive impact on the economy affected [illegible]. The writers of numerous comments to the Draft

1723-10

[illegible] Virginia apparently saw no such difficulty with respect to the effect of the expansion of the CBRS in the South of Texas. [illegible] Texas senior William P. Clements, several Texas [illegible] of the U.S. House of Representatives, other elected [illegible] of Texas, the Town of South Padre Island, Cameron [illegible] and Padre Island Business Owners, Realtors, Union officials and other [illegible] and civic leaders were unanimous in pointing out the [illegible] would have effects which will result from the expansion [illegible] the CBRS in this area of Texas. The vast negative reaction [illegible] the federal process at the public hearing held by Department of [illegible] representatives in Brownsville, Texas, in June of 1987, [illegible] the impact of the general public over the local [illegible] impact of the expansion of the CBRS in South Texas. In [illegible] these comments is correct by real estate brokers who are [illegible] familiar with the area, if this is so, the DLEIS [illegible] from all real estate to evaluate the effect of the [illegible] of the CBRS in this area of Texas. The writers of the [illegible] have erred, failed or refused to consider this issue.

d. Other Economic Impacts. The DLEIS discusses other [illegible] impacts of the expansion of the CBRS, including

CONTINUED RESPONSE TO 1723 HP INTERESTS

1723-8 There is no evidence to conclude that adding the 7½-mile stretch to the CBRS would increase the welfare roles

1723-9 There is no evidence to conclude that adding the 7½-mile stretch to the CBRS would make the land unmarketable Landowners are free to develop their property even if it is included in the CBRS

1723-10 The opinions of all the commenters on the 1987 Draft Report to Congress have been considered and are part of the public record Detailed analyses of the local impacts of the recommendations in all 19 affected States and Territories were not feasible

1723-11 impacts on aesthetics and recreation. The discussion contained in the DLEIS has no relevance to South Padre Island, where over 9+ miles of shoreline immediately north of the 7 1/2 mile tract are already included in the CBRS, or located in the National Seashore, and therefore permanently protected from development. In addition, the DLEIS ignores existing land use laws and

1723-12 regulations, such as the Open Beaches Act, in Texas, and local governmental development controls which adequately protect the interest of the public in recreation and aesthetics.

4. Impacts of Natural Environment. Again, the portions of the DLEIS dealing with the impact of the expansion of the CBRS on the natural environment have little relevance to South Padre Island where over 90 miles of coastline are already permanently protected undeveloped, with the 7 1/2 mile tract in question,

1723-13 and there are many other large tracts of land already set aside for the protection of wildlife habitat, such as the Laguna Atascosa National Wildlife Refuge. The DLEIS fails to consider the effect of existing state, federal and local land use laws as mentioned above, such as the Texas Water Code, the Texas Open Beaches Act, which already adequately regulate development of wetlands, dunes and other lands falling within the jurisdiction of the U.S. Army Corps of Engineers permitting process.

[illegible]

The 7 1/2 mile tract discussed in this comment represents only a small fraction of the many miles of South Padre Island already included in the CBRS, or in the National Seashore. The development of the area in question is vital to the regional economy, and in fact, already being developed. The continued development of this small portion of South Padre Island, which is not, nor will ever be permanently protected from development, will have no substantial impact on the protection of wildlife habitat. Furthermore, with respect to the Voluntary [illegible] of the CBRA, the addition [illegible] of wetlands and other [illegible] adjacent to the 7 1/2 mile tract in question is [illegible] of the standard of the area in question into the CBRS, and the damaging effect such an act [illegible] would far outweigh the benefits. Federal [illegible] resources invested in future [illegible] growth.

As of the [illegible] South Padre Island [illegible] prior to [illegible] to demonstrate that the tract in question [illegible] for inclusion in the CBRS. The DLEIS has not made any effort to identify, investigate and consider these various factors, despite the fact that each of them was raised repeatedly in the many comments made to the Draft Report to

VIII-51

[CONTINUED RESPONSE TO 1723 HP INTERESTS]

[1723-11] Opinion noted - no response needed

[1723-12] Texas State and local regulations and land use laws are discussed in detail in Volumes 19 and 20 of the CBRS Report to Congress. The CBRA does not interfere in any way with local laws.

[1723-13] Opinions noted. The CBRA does not interfere with existing Federal, State, and local land use laws and other regulations.

[illegible] The DEIS appears to be a justification for the adoption of as few acres as possible to the CBRS, rather than an objective examination of the impact of the plan as contained in the Draft Report.

The various criteria listed in this report were all [illegible] and the various competing interests were weighed by [illegible] which determined that the [illegible] tract should be excluded from the CBRS. To recommend the inclusion of the [illegible] tract at this time, with so little study & thorough and objective discussion of these criteria in the DEIS, would be a disservice to the citizens and a breach of the commitment of [illegible] to the people of Texas.

[illegible]

[illegible]

[illegible]

PLAYA DEL RIO

May 15, 1988

Audrey L. Dixon
Coastal Barrier Study Group
National Park Service
P.O. Box 37127
Washington, D.C. 20013-7127

Dear Ms. Dixon:

1741-1

1741-2

RESPONSE TO 1741 PLAYA DEL RIO, INC.

1741-1 When the CBRA was enacted in 1982, Congress only included coastal barriers on the Atlantic Ocean and Gulf of Mexico coastlines in the CBRS. The legislative history does not clearly indicate whether Congress intended to expand the CBRS eventually to include other coastlines. Because Congressional intent is unclear, the DOI will only complete studies of other coastlines if Congress enacts legislation directing it to do so.

1741-2 In enacting the CBRA, the Congress determined that development on coastal barriers is risky and should not be supported by the federal government. A comparison of financial outlays in coastal versus inland areas is, therefore, not necessary to justify the CBRA.

1741-3 There are also mistakes within the proposed studies such as the description on page IV-20 wherein the only evacuation route is described as a single lane causeway when that is factually untrue.

1741-4 In the area of Cameron County, Texas, you are creating [illegible] for the further development of a tourist industry in an area that is one of the poorest areas of the United States. The amount of people taken out of welfare that would be employed in construction and tourist related industries would certainly be at a great savings to the United States Government and would be offset by any potential risk.

1741-5 Lastly, but not least, as the technological changes in construction [illegible] have been going within the last decade have in fact taken [illegible] we can now have very [illegible] [illegible] that we believe the limit, [illegible] reduce the potential risk to the environmental [illegible].

I thank you for your attention to this matter and look forward to hearing from you at your earliest convenience.

Sincerely yours,

A. C. Nelson
Executive Vice President

ACN:ll enclosure

1741-3 The description of the Queen Isabella Causeway has been corrected in the FEIS.

1741-4 There is no evidence that inclusion in the CBRS would increase the number of people on the welfare rules or that exclusion would decrease the welfare rules.

1741-5 The construction technology that is available is not relevant to the identification of undeveloped unprotected coastal barriers as required by Section 10 of the CBRA.

660 Piedmont Drive, NE
Atlanta, Georgia 30306
March 7, 1988

Attn: L. Olsen, Coastal Barriers Study Group
National Park Service, P.O. Box 37127
Washington, D. C. 20013-7127

Re: Comments on Coastal Barriers EIS

Dear Mr. Olsen:

1717-1

1717-2

1717-3

Harry Clark Gregory

RESPONSE TO 1717 HARRY CLARK GREGORY, ATLANTA, GEORGIA

1717-1 The impacts of sea level rise on coastal barriers is discussed in detail in Volume 1 of the CBRS Report to Congress (Chapter II). Recent studies estimate that 50%-85% of coastal wetlands could be lost if sea level rises as projected. Each 1-foot rise in sea level will erode the typical sandy beach 100-500 ft. Many undeveloped barriers will narrow, overwash, and migrate landward. On developed barriers, the necessary levels of expenditure for beach nourishment and property protection will increase dramatically.

Comments on Cape Hatteras lighthouse noted.

1717-2 Support for adding the Pacific coast and Great Lakes barriers to the CBRS noted.

1717-3 Opposition to excluding military lands from the CBRS noted.

WILLIAM G. SMITH

[illegible] Road N.W.
Washington, D.C. 20016

March 10, 1988

William P. Horn
Asst Secy. Fish and Wildlife/Parks
Dept of the Interior

COMMENTS ON DRAFT STATEMENT ON COASTAL BARRIER SYSTEM

Dear Mr. Secretary,

1746-1 The "No Action" proposal should be adopted because our country could be seriously damaged if the "Proposed Action" is endorsed.

Implicit in the "Proposed Action" is that only the federal government can be trusted to do what is best for the people and that these agencies can circumvent the 5th Amendment by taking private property without using the correct legal process.

1746-2 Unjust Financial Loss: Any person owning "undeveloped" property would lose the right to develop that property and receive no compensation for that loss. If this property is part of the 1,401,465 acres involved, an additional 1,010,840 acres being added by the "Proposed Action", then it adds that financial loss will occur. I have demonstrated in Attachment B that "undeveloped" includes docks, trailers, dwellings, etc. This hurts Carolinian workers about this proposal where [illegible] acreage increases annually while [illegible] involved declines. Adjust this.

Fair Alternative: The 14th Amendment [illegible] to the States or to the people rights. The "Proposed Action" would transfer to federal [illegible]. Apparently planners and [illegible] coastal flood and eligible service (Fed. protection cycle-1a) and can best get it by this land grab procedure.

1746-3 [illegible] part of the Impact Statement defending the "No Action" choice is a startling [illegible] argument for the "Proposed Action". The over [illegible] apparent attempt [illegible] the Fed. efforts to gain control over this vast acreage. [illegible] these officials be trusted. [illegible] that it is obvious. They believe in private [illegible] a threat to the [illegible] of Congress to build the [illegible] a buffer restrict and illegal [illegible] area. Has their land [illegible] extended what they would [illegible] have temporarily given it had they [illegible] yet the [illegible] carry out a Congressional authorization" when they possess [illegible] of thousands of acres at this point, why cannot they help serve other public needs? Does the Coast Guard's access to the ocean at this inlet not seem more important than their holding this bit of land? This wasteful [illegible] affects a tiny acreage. Can we give them an additional million and half acres?

The decision to cut [illegible] of the North Carolina shoreline removes the local [illegible] failure of [illegible] it comments on the 1982 plan, yet by argument still applies to this "Proposed Action". [illegible] and incorporate it herein for your further consideration.

Please bear in mind that a principle of this administration remains that "less government is better than more government."

Sincerely,

William G. Smith

VIII-56

RESPONSE TO 1746 WILLIAM G. SMITH, WASHINGTON, DC

1746-1 Support for the No Action alternative noted

1746-2 The CBRA does not in any way restrict the rights of landowners to do whatever they wish with their property, therefore, it cannot be interpreted as a taking and compensation would not be appropriate

1746-3 Opinions noted - no response needed

1781

Congress of the United States
House of Representatives
Washington, DC 20515

March 7, 1983

Coastal Barriers Study Group
Department of the Interior
National Park Service [illegible]
P.O. Box 37127
Washington, D.C. 20013-7127

Dear Sirs and Mesdames:

[illegible] Coastal Barrier Resources System.

The [illegible] one of my foremost priorities.

[illegible] Florida

1781-1 Keys, is, however, a [illegible] attempt by the Reagan Administration to begin to withdraw the federal government's commitment to the thousands of residents of the Keys in providing flood insurance and other crucial federal [illegible] activities. Had this definition of a barrier island been included in the [illegible] legislation, I would have vigorously opposed the measure.

The Florida Keys are [illegible] of a number of unique communities. [illegible] of the environmental [illegible]

1781-2 [illegible] designed [illegible] environmentally sensitive areas of [illegible] percent [illegible] these areas of critical concern, as well as a [illegible] height restriction on new buildings and [illegible] and [illegible] designations. As you have so accurately noted, the Florida Keys are [illegible] endangered plant and animal species, and the [illegible] has developed a responsible and reasonable plan to protect these areas from further growth.

Finally, I believe that the Department of Interior has not given

1781-3 adequate consideration to the effect which this proposal would have on [illegible] who may have purchased property on undeveloped land [illegible] intending to build a home and live out the remainder of their retirement years. These individuals would be denied the opportunity to [illegible] which they thought they had guaranteed, perhaps [illegible]

RESPONSE TO 1781 DANTE B. FASCELL, CONGRESS OF THE UNITED STATES, HOUSE OF REPRESENTATIVES

1781-1 The DOI considers the Keys and fringing mangroves coastal barriers because they function as barriers, they protect associated aquatic habitats, are subject to wind, wave, and tidal energies, and are vulnerable to severe flooding and damage by hurricanes. Although the limestone core of the Keys prevents the islands from migrating landward as sandy barriers do, it does not reduce the risk of storm tide and flood damage and the Keys have one of the highest probabilities of experiencing a hurricane in the Country. A limestone composition also does not reduce the Keys vulnerability to sea-level rise.

1781-2 Information noted. Land-use planning, however, does not qualify a barrier as otherwise protected, nor is there anything else in the DOI criteria which allows an area to be excluded from the CBRS because of planning.

1781-3 Opinions noted. If the Keys are included in the CBRS, there is nothing in the CBRA that prohibits property owners from building on their land. Federal subsidies which support development and new Federal flood insurance, however, would not be available in the CBRS.

The LEIS raises many critical points about the unique environment of the Florida Keys and the need to protect its many natural resources from the hazards of uncontrolled growth. I, frankly, only wish that the Department would be more cognizant of the need to reduce damage to the fish and wildlife habitat of the Keys and to other valuable natural resources which characterize the region in its consideration of other issues which could result in long-term damage to the environment of the Keys, most notably offshore oil and gas leasing.

1781-4 I strongly oppose the inclusion of the Florida Keys in the Coastal Barriers Resources System, and I urge you to continue to allow the government and the people of Monroe County to develop comprehensive and reasonable plans to restrict the growth of the area, in conjuction with the State of Florida and the federal government. I strongly urge the Secretary to delete the Keys from his recommendation for the expansion of the CBRS.

Sincerely,

Dante B. Fascell
Member of Congress

DBF:t.

VIII-58

CONTINUED RESPONSE TO 1781 DANTE B. FASCELL, CONGRESS OF THE UNITED STATES, HOUSE OF REPRESENTATIVES

1781-4 Opposition to including the Florida Keys barriers in the CBRS noted